

AMERICAN AGRICULTURIST, FOR THE Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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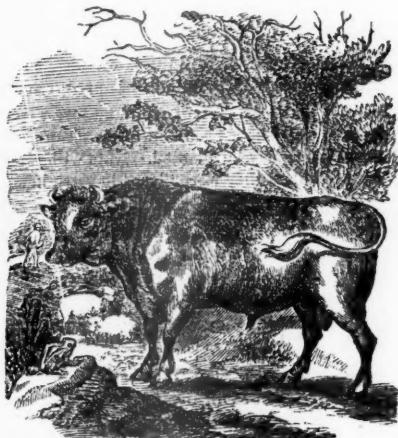
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American Agriculturist in German.

Each number of this Journal is published in both the English and German Languages. Both Editions are of the same size, and contain, as nearly as possible, the same Articles and Illustrations. The German Edition is furnished at the same rates as the English, singly or in clubs. A club may be part English, and part German.



Notes and Suggestions for the Month.

The sign of Taurus is very appropriate for the month in which farmers depends so much upon the patient labor and great strength of the ox. There are, indeed, many regions where the labor of the ox has been supplanted by that of the mule and horse; but still, where the pioneer pushes his long furrows into the almost boundless prairie, where the Indian trail is still fresh and the tough sod has a tenacity that only age will give, there we find the ox team the chief dependence. And, even further off, where the ever westward-moving trains bear the gold-seekers, or still more pushing pioneer farmers, into the golden mountains of Colorado or Idaho, the loud "whoh-haw" of the drivers, and the sharp crack of the snapper on the ox-goad, make the music of the Plains. It is worthy of note that those traveling with ox-teams are known among the Indians who see them on the way, as "whoh-haws"—which name, however, is with the red men rather a term of reproach, for these people not being so liberal with their presents of sugar and whiskey, the Indian says: "Ugh! no shug—no whisk,—he whoh-haw." This is wandering: to return to our beeves. It has often been a surprise to the writer, when on an elevated point in New-England, where from a mountain-top much comparatively level country could be surveyed, to see the great number of ox teams; and could we pass in a balloon from west to east over the

best cultivated portion of the country at this season and on a fair day, we might get some adequate idea of the dependence of our agriculture upon the ox, as a beast of draught. According to the forwardness of the season, and the condition of the soil, the ox-teams might be seen following the divergent cart-paths—now from the barns and stock-yards, hauling the black, teeming and steaming accumulations of the winter months; now straining in long "strings" of several yokes before the plow, crowded beam-deep into the yielding loam turned up dark and mellow behind them; now dragging with easier gait and in single yokes the harrow or the roller; and, besides, bending their necks to many other kinds of farm work.—Working oxen will bear a great deal of abuse, but short feed and hard work are fatal to *profit*. Nevertheless, among some farmers there is a theory that it is no disgrace to drive what they call "Spring-poor" cattle; as if this quality of "spring-poorness" was, like shedding off their coats, an inevitable annual occurrence. The ox thrives on simple hay or corn stalks, and if he has enough to eat, will go through the winter, bearing all the severity of the weather without shelter, however cruel it may be to subject him to it, and come out in good working order. Well-fed, however, he will do nearly double work.

The majority of calves are dropped at this season, and so, perhaps, the hopes of the race of bovines may be said to be symbolized in the sign of the Zodiac through which the sun passes this month. May their stars be lucky!—The constellation Taurus, by the way, is one of the most beautiful in the heavens, remarkable for those two striking groups, the Hyades and the Pleiades, so beautifully alluded to in Job, doubtless expressing the invariableness of the Seasons and the supposed effect upon the weather of the stars near which the sun passes: "The waters are hid as with stone, and the face of the deep is frozen. Canst thou bind the sweet influences of the Pleiades, or loose the bands of Orion?" So the gentle spring-time releases the waters and the herds from their winter confinement, and causes "the bud of the tender herb to spring forth."

Work for the Farm, Barn, and Stock Yard.

April is preeminently *seed time* throughout most of the Northern States: though beginning in March, it is chiefly in April that the bulk of the crops are sown. There is a rainy season and breaking up of the winter in March, followed by high and drying winds, and then by some weeks of comparatively dry weather. This dry "spell" seldom begins before March 25th, and rarely lasts beyond the first of May. Its approach may be known by reports of the state of the roads in Virginia and southward, and from thence we shall hear of the beginning of the cold rains of May some time before we experience them here. It is on this account

that we ought to put in only those seeds that come up quickly or surely, and that are not particularly injured by cold, wet weather after they are up. Such are grass and clover seed, wheat, barley and oats, peas, carrots, onions, beets, flax, etc. But corn, sorghum, broom-corn, millet, beans, squashes, etc., if sown early are apt either to rot in the soil, or to drag out a puny existence, or die outright by late frosts.

Accounts.—Farm work begins to be complicated, and it will require a good deal of perseverance and application to keep the accounts all straight. But it well repays the trouble.

Barley.—Sow 2½ to 3 bushels per acre, on good soil, in fair tilth. To kill the smut, steep one day in a moderately strong brine containing some blue vitrol, then roll in lime or plaster. The Nepaul variety is highly esteemed, but scarce.

Birds.—Do not forget to provide houses for birds where they will protect the garden and orchard from insects. See page 76, of last No.

Buildings.—Collect all decaying materials, and clean up everywhere. Whitewash the poultry house inside, the cattle stalls, and interior generally, where lice or any vermin might hide.

Cattle.—Feed work-cattle well and card them frequently. Apply unguentum mixed with 4 parts of lard, behind the horns and a little down the back, if there be any evidence of lice. Be very regular in feeding and giving cattle rest.

Cows and Calves.—Separate cows and calves early, if the milk is the main thing. Where veal is especially valuable, it often pays best to let calves run with the cows, sometimes giving one cow two calves, and as they are marketed, supplying their places with others. New milch cows ought to have some succulent food (roots or cabbages) at this season. It materially increases their flow of milk, and the increase is maintained when they get to pasture. Soiling ought not to be commenced before a constant supply of green food can be maintained.

Carrots.—For the farmer who feeds cows and horses, there is no crop more remunerative. It necessitates thorough culture and enriching of the soil, and as a preventive of disease, and as excellent feed, it has no equal. Sow Orange or Altringham early, in good, deep, clean soil.

Cellars should be submitted to thorough clearing out, cleansing, and whitewashing, every particle of vegetation, bits of wood, boards, etc., removed, and roots sorted over and shifted.

Clover may still be sown on winter grain, or by itself. Sow plaster with it, or afterward.

Cranberry Swamps.—Prepare for setting out plants as soon as the water can be drawn off.

Corn Ground.—Prepare by manuring well and plowing; but seldom plant before May 10th.

Draining.—There is seldom time to do much at draining in the spring. See the effect of that which has been done, estimate advantages, note

wet, springy spots and their relations to the slopes and to each other, to ridges of clay or gravel beds, and be prepared to undertake systematic draining, or extend a plan already started, as soon as possible.

Fences.—See page 107 and the notes last month.

Grain Fields.—Roll where heaved by frost. Sow plaster and ashes, castor pomace, or the like, on fields which have suffered by winter, or lack thrift.

Hedges-Hops.—See sundry items in "Basket."

Help.—The organizations for securing for immigrants good places, and for good employers good help, are worthy of confidence so far as we know. Secure good hands, pay them all they are worth, and secure their confidence by meriting it. "The laborer is worthy of his hire," is the Scripture rule.

Hogs are the best manure makers on the farm, otherwise they could not be raised with profit anywhere at the East. Secure a good stock of shoats, and keep them at work. They need not be fattened if this will be a losing business; hog breeding, if conducted with care, is generally profitable.

Horses.—See that the increased demands upon them do not cause harness galls—bring them gradually to hard work, letting them harden by degrees.

Manure.—After spreading, plow or harrow in at once. It is best buried near the surface. A good compost for corn or potatoes is made by mixing 1 or 2 cwt. of Castor pomace to the load of muck, and working it over once in two weeks. Hen manure mixed with its weight of muck, moistened with chamber ley—allowed to heat—this finely pulverized and mixed with more earth or muck is an excellent guano. Save bones, secure dead animals, and treat both as recommended on page 70, last No.

Meadows and Pastures.—Keep off large and small cattle. Mixed grass seeds may be sown on thin spots and harrowed or raked in, or left upon the surface,—the first preferable. The sweepings of hay seed where a mow of hay has been, furnish good seed, unless weed seeds abound. Never turn stock to pasture till the grass is well grown: the feed is hurt for the entire summer.

Oats.—Sow early—the earlier the better. Get seed from a more northern latitude. Prime seed ought to weigh 40 to 44 pounds to the bushel. The demand for use in the army is and will be great.

Onions.—When sown on new soil, sow mixed with carrot seed; both crops will mature; the onions first. The second and following crops on the same land improve. The cultivation of onions for seed will often be profitable where the onion maggot is not known or is not very annoying.

Potatoes.—For the early market, plant Dykeman, or some other approved early white sort, in warm, dry soil, well enriched,—the earlier the better. For main crop, plant early and deep, in mellow soil, without any fresh or strong manure. Ashes and plaster are excellent fertilizers for potatoes.

Poultry.—Set all kinds as early as good eggs can be obtained. Old butter or lard tubs are excellent for nests. The chicks should be fed bread soaked in milk at first; cooked Indian meal afterward. Pure water, green food, and some grain daily, with scraps of meat now and then, heaps of pounded oyster shells, bones and gravel, and a dusting box containing ashes, are essential to profitable keeping of hens in close quarters.

Roads about the Farm.—Work on the cart paths and roads is the first that can be done in the spring. Good, well-graded paths and level, strong bridges over brooks and ditches, save the teams and vehicles, make work easier, and give a thrifty look.

Sheep.—See article on page 112, and Basket items.

Sorghum—Chinese Sugar Cane, and Imphee—Prepare land as for corn. Secure pure seeds.

Tobacco.—Prepare seed-bed, spading it deep, in rich soil, in a warm place. Lay on a heap of straw and brush and burn it off; remove the sticks and rake in the ashes. Sow proved seed (see Basket item), 1 tablespoonful to a square rod, and roll it or "spat" it over with a board. If the weather be very dry, water with liquid manure. To encourage germination, the seed may be mixed evenly with 3

or 4 times its bulk of fine soil and kept slightly moistened, in a warm place, till tendency to sprout is apparent, when it must be sowed. The admixture of earth secures evener seeding. One square rod of seed-bed will set an acre or more.

Tools.—A good, full set of convenient, sharp, light, strong tools is on many farms worth at least another hand. Send in orders early for the best mowers, reapers, hay-forks, etc., or you will not be accommodated this year.

Wheat.—Sow early. See article page 75, last No. A good breadth should be put in this spring.

Orchard and Nursery.

The seller and planter of trees will both be busy this month. The nurseryman should have every thing ready to insure dispatch and correctness in filling orders. A regard for the reputation of the establishment should not permit the sending out of any badly grown or unhealthy tree, nor any of doubtful identity. It is a great disappointment when one orders a selection of trees, to receive other varieties in place of those selected, with the excuse that they are "just as good." One rarely orders a second time from a nurseryman who does this. Trees that are to go a long distance must have their roots packed with a plenty of damp moss.—In established orchards but little is to be done except to repair damages. Remove broken limbs, pare the wounds smooth, and cover with grafting wax or shellac varnish. Treat girdled trees as directed last month. Several letters say that the application of soft soap and sulphur has kept off the rabbits. During a damp time wash the trunk with soft soap thinned with water so as to apply readily with a brush.

Almond Trees are about as hardy as the peach usually is, and are worth trying as a curiosity at least.

Budded Trees.—If not done last season, cut them back to within two inches of the bud, if it has taken.

Grafting.—Do it according to directions given last month. A correspondent says that the best way to graft old trees is to head the branches all back in the spring, cover the stumps with waxed cloth and manure the tree. It will throw out a great number of new shoots which are allowed to grow the first year. The next season select the strongest of these, near the ends of the stump, for inserting the grafts, making the choice with a view to the future form of the tree, put one graft in each of these and remove all the rest. It is claimed that this treatment causes a renewed growth of root and that such trees do much better than when the graft is put directly into the old stump. For poorly growing and old trees this may do.

Insects.—Continue to crush the eggs whenever they are found glued to the twigs. Remove scale by use of soft soap alone or mixed with sulphur or lamp oil. If weak young trees have scale, cut them back quite severely to induce a vigorous growth. See article in "Basket" on a tree protector against borers. Alonzo Wilson of Iowa, recommends for the same purpose, as well as to protect from sudden changes of temperature, a jacket of bark taken from a basswood or hickory tree. A section of such bark long enough to reach from the limbs of the fruit tree to the ground is peeled and put around its trunk.

Layers.—Last year's growth from stools of quince and others propagated in this way, may be layered.

Manure.—It is not too late to apply manure to trees with good effect; not a mound around the trunk, but a good coating as far as the roots extend.

Planting.—If the ground for an orchard was not prepared last autumn, do it at once. Use only decomposed manure, reserving fresh manure for the surface. Plow deep and subsoil. The soil for an orchard should be 18 inches to two feet deep, and dry. If not dry it should be drained. If freshly broken sod is used for planting trees, in making the holes for planting, remove the sods so that they will not come in contact with the roots. Plant the trees 30 to 40 feet apart in quincunx order; that is the trees in one row opposite to the intervals of the next,

Make the holes abundantly large, and in planting observe all the precautions given last month. There is a growing impression against staking trees, many claiming that if headed back according to the size of the roots it is unnecessary. One of our correspondents uses strong hooked pegs sawn out of 1½ or 2 inch plank; these are 16 inches to two feet long according to the nature of the soil, and made with a projecting head. He drives two or four of these hooks over the roots to keep the tree steady. We have never seen this in use.—Cultivate nothing but hoed and manured crops in the young orchard. In regard to varieties the only safe guide is to find out what has succeeded in the vicinity. Lists for particular states are only general guides from which exceptions must very frequently be made for each neighborhood.

Peach Trees.—These should be set in good dry, well-drained soil and elevated or rolling land should be selected if possible. In planting stones or in getting buds for propagating, be sure to get them from healthy trees. This is the only safeguard against the yellows. We have the testimony of several to the efficacy of a heap of stones around the tree in keeping away the borer. Young trees killed by the severe cold of last winter, if cut down to the ground, may throw up shoots which will serve for budding. Old trees are entirely destroyed in many places. Probe out the borers and apply some kind of protection as noted in "Basket" columns. Ashes invigorate sickly trees and in a measure keep off borers.

Pears.—The orchard culture of this fruit is too little appreciated. Standards are preferred for this.

Seeds, Pits and Nuts of fruit and forest trees and shrubs, which have been kept in boxes of earth during winter, may be planted. Nuts will rarely germinate unless they were placed in earth in autumn.

Wind-breaks.—A protecting hedge of some fast growing tree is of great service, especially in districts where high winds prevail. The soft maple, silver poplar, Ailanthus, and white willow are quick-growing deciduous trees for this purpose. The Norway Spruce, White Pine and Arbor Vitæ, are the most rapidly growing evergreens.

Kitchen Garden.

In selecting a spot for a new garden, a warm, rich piece of ground should be chosen, and if at all inclined to be wet, it must be thoroughly underdrained. In localities where strong winds prevail, there should be some protection upon the windward side: this may be afforded by a hedge of Norway Spruce or other quick-growing evergreen, or by a high, close board fence. It is well to have the garden close to the house, so that it can have frequent attention without the necessity of traveling far to give it. A plenty of manure and deep plowing or spading are necessary to secure the best results. If the directions given last December were heeded, the garden will be ready for the spade or plow as soon as the soil is dry enough; but as most persons defer their clearing up until spring, this in a majority of gardens will be the first work to attend to. The remains of last year's crops, brush, old stakes, and other rubbish are to be brought together in heaps and burned. There is nothing gained by working the soil before it has become dry and settled, and most seeds should be kept out until it has been warmed up by the sun.

Asparagus.—Rake off the coarse litter and carefully fork in the fine portions of the manure. Give a dressing of salt. Seeds may be sown and new beds made by planting, as indicated last month.

Beans.—Early sorts may be planted, if danger of frost is over. Limas may be started on sods in the hot-bed, as directed on page 82, last month.

Bean Poles and Pea Brush.—If a stock has not been secured, cut it at once, before the leaves start.

Beets.—Sow early sorts as directed on page 115.

Broccoli.—This is in appearance much like cauliflower, but is inferior to it. It generally heads freely. Treat in the same way as cauliflower.

Brussels Sprouts.—This little-known vegetable is figured on page 13 (January), and its culture is the same as that of the cabbage.

Cabbages.—Sow early sorts in hot-bed, cold-frame, or pots, if not already done. Sift ashes over the plants already up, to keep off insects. Seed may be sown in the open ground near the end of the month. Early York is a reliable kind. Little Pixie is highly recommended as a new early sort. Winingstadt is good for medium early or late, and succeeds on poor soil better than other varieties.

Carrots.—Sow Early Horn after reading the hints on pages 108 and 115.

Cauliflower.—Manage according to directions on page 116. If insects appear, use ashes and plaster.

Celery.—Plants already up should be shaded from the sun from 10 A. M. till 4 P. M., on clear days. Thin to an inch apart, and give air every morning. Sow seeds in a moderate hot-bed, or in a cold-frame, and at the end of the month in the open border. It is a good plan to burn over the surface of the seed-bed with brush or litter, to destroy weed seeds, before sowing the celery. The Early White Solid, and the Red Solid are best early.

Celeriac.—Sow in hot-beds, or later in the open ground. See page 116.

Cold-Frames.—In absence of a hot-bed, these are useful to forward seedlings. They are convenient to receive potted plants, or plants which have been started in hot-beds may be pricked out in them, until the weather will allow them to be put in the open ground. Remove the sash every fine day to harden off the plants, and cover in the afternoon.

Cress, (Peppergrass).—Sow as directed last month.

Cucumbers.—Start seeds on sod in hot-bed, cold-frame, or in a box in the house, as directed on page 82, last month. Some hollow out large turnips and fill with earth, so as to make kind of flower-pot, and set these in boxes in the house and start the seeds in them. The turnip, with the plant, is set out in the hill, cutting off the bottom of the turnip at the time, to allow the cucumber roots room to spread. Either of these contrivances will do to get a few very early. See "Basket" item on pots. May easily enough to sow for the main crop.

Drain.—If there is time at this busy season, put tile drains in the wettest part of the garden.

Egg Plants.—These grow very slowly at first, and they should be forwarded early. As soon as the plants get large enough, it is well to pot them.

Eudive.—Sow early for summer use.

Garlic.—Separate the small bulbs, or "cloves;" set in rows a foot apart, and 6 inches in the rows.

Herbs.—Sow as directed on page 111, as soon as the weather is settled and the soil is warm.

Hot-Beds.—In cold climates the first of April will be found quite early enough to start the hot-bed for the family garden. Ample directions were given last month. Those in which the plants are up, will need airing on warm days, and shading when the sun is very powerful. Stir the soil between the rows; weed, water, and thin the plants as needed.

Kohl-rabi.—Sow in a seed bed, or if wanted early, in hot-bed, same as cabbages.

Horse Radish.—Treat as directed last month.

Leeks.—See directions for culture on page 109.

Lettuce.—Set out plants which were started under glass. Sow in open ground as soon as a bed can be prepared, in rich soil, in drills a foot apart, and thin to nine inches or a foot. Hoe frequently.

Manure and Compost.—Work over the heap, and remove all sticks and rubbish. The more finely divided it is, the better. An abundance of good manure has much to do with "luck" in gardening. Prepare a tank or cask for liquid fertilizers.

Mustard.—Sow for salad or greens as soon as the ground can be worked, in shallow drills a foot apart.

Melons.—Start early sorts same as cucumbers.

Onions.—Potato, Tops, and Sets, may be put out in good soil, at the distance of four inches, in rows a foot apart. The clusters of potato and top onions are to be broken up, and each small bulb put by itself. Sow seed as soon as the soil can be prepared. Give well-decomposed manure and pulverize the soil thoroughly. It is a good plan to burn over the bed with straw before sowing. Sow thinly, in drills 15 inches apart. Be careful to get good

seed. See article on page 109, and for field cultivation, our Onion Pamphlet referred to in "Basket."

Parsley.—See page 111. Soak the seed for 12 hours in tepid water before planting.

Parsnips.—Sow in drills 15 inches apart, in rich, deep soil, as soon as may be. Get good seed.

Peas.—These may be put in early, as they will stand the frost. Put the first sown under shelter of a board fence. See notes on dwarfs on page 116. For tall sorts have the rows 3 to 6 feet apart, according to the height. The plants will come sooner if the seed is soaked 24 hours in tepid water.

Peppers.—Sow in hot-bed.

Potatoes.—Plant as directed last month. See note on starting them, on page 75, March No.

Potting.—Tomatoes, Egg Plants, Cauliflowers, and other plants started early in hot-beds, may be transferred to small pots filled with good soil, and kept in a cold-frame or spent hot-bed. They will, if properly aired and watered, become strong, stocky plants, ready to turn out into the garden as soon as frosts are over, and will come into bearing sooner than those not potted in this way.

Pricking Out.—The advantages of potting may be in part gained by "pricking out," or transplanting from the hot-bed to nicely prepared soil in a cold-frame, previous to setting the plants where they are to remain. In both cases the plants receive a beneficial root pruning which forwards them.

Radishes.—Seed may be put in vacant places in the hot-bed. Unless a radish grows rapidly it is worthless. Therefore, a quick, rather sandy soil is the best. Sow at intervals for succession.

Rhubarb.—Fork in manure around the old plants. Make new beds if the crowns have not started too much. Remove the earth around the old plant, and with a sharp spade remove a bud with a portion of root attached. Set out in well manured ground, 4 feet each way. Linnaeus is best.

Salsify, or Vegetable Oyster.—Sow early, in drills one foot apart, and cultivate the same as carrots. Treat Scorzonera, a similar vegetable, the same.

Sea Kale.—This is described on page 116. Those who wish to try it can sow the seeds early.

Spinach.—Plain directions are given on page 111.

Squashes.—Early sorts may be forwarded as suggested for cucumbers.

Sweet Corn.—A few hills of some early variety may be started in sods, under glass, and a short time be gained over that planted in the ground.

Seeds.—Biennial roots and bulbs, such as turnip, beet, onion, etc., which have been saved to furnish seed, are to be put out in good soil, taking care to keep different varieties of the same kind as far apart as possible, to prevent mixing.

Swiss Chard.—This is a variety of beet cultivated for the leaf only, the root being worthless. Sow like other beets, and break off the outside leaves as they develop, and use like spinach.

Sweet Potatoes.—These are started the present month in hot-beds. The potatoes are split lengthwise if large, and laid flat side down, close together, on the bed and covered about two inches deep, with a rich, fine compost. When the shoots push above this, an inch more is added. The bed is watered as needed and kept warm at night, and the plants exposed to air during fair days. When the sprouts are of sufficient size and well-rooted, the best are slipped off and the potato returned to the bed for the others to grow. A bushel of potatoes is said by Mr. Thompson to yield from three to five thousand plants, each thousand of which should produce forty bushels of potatoes.

Tomatoes.—Those started early may be potted off or pricked out in a cold-frame. Seeds may still be sown in hot or cold-frames. Those who are without these, can start some seeds in small pots in the house. Shift to larger pots as the plants need.

Tools.—See that all are in good order, and make good all deficiencies. A good spading fork is an indispensable tool in the garden.

Turnips.—The early sorts are to be put in as soon as the ground is open, in drills a foot apart.

Vegetable Marrow.—This occupies in English gardens the place that squashes do in ours. It is grown like a squash and eaten in the same way from a very early state until the seeds ripen.

Fruit Garden.

The soil for small fruits should be well drained, well manured, and thoroughly and deeply plowed or spaded. In selecting varieties for planting, it should be considered whether the product is for market or for home use. The fruit garden, besides the small fruits, may properly include dwarf trees of those kinds usually cultivated as standards.

Cherries.—The standard varieties when budded on the Mahaleb stock make compact trees for the fruit garden. They may all be had at large nurseries.

Currants and Gooseberries.—Manure the old plants and set out new ones. Plant cuttings; first removing all but 3 or 4 of the upper buds, and crowd the soil firmly around their lower ends.

Grapes.—So much is said on other pages upon the grape that nothing needs to be added here.

Blackberries.—No fruit garden should be without some of the improved varieties. The New Rochelle is best, all things considered. Set the plants, at least 6 feet apart each way, previously cutting back to within 6 inches of the root. Prepare a trellis to tie the canes to. Wire is generally used, stretched between strong posts, which are 6½ feet high above the ground. No. 9 or 10 wire is used, putting one piece two feet from the ground, and the others above it at 18 inches apart. Secure the canes to it by means of lead wire or soft twine.

Raspberries.—Uncover buried canes and tie to stakes or trellises. Cut a few inches from the tops of the canes, and give a liberal dressing of well decomposed manure, which is to be carefully forked in. Set out new plants, three feet apart, in rows which are four feet distant. Franconia, Fastolf, and Brinckle's Orange are good sorts for the family garden. The Hudson River Antwerp is preferred around New-York as a market fruit. Do not forget to try the American Black Cap. See note on page 85 (last month). Established vines are to have the wood cut out which bore the year before.

Strawberries.—The mulching of straw is to be parted directly over the plants, leaving it on the bed to keep down weeds and protect the fruit from being soiled. For garden culture, make beds 4 feet wide, with 18-inch alleys between. Set 3 rows of plants in each bed, one row in the center and the others 18 inches from it, putting the plants 12 to 18 inches apart in the rows. Spread the roots well, and plant as deeply as may be, without covering the crown of the plant or sinking below the surface.

Flower Garden and Lawn.

If the weather is suitable, the work of laying out new grounds and arranging old ones can be pushed rapidly. All rubbish is to be gathered from the lawns, paths, and borders, and all damage done during the winter repaired. The condition of the lawn, or grass plot, should be examined, and if necessary, repaired, according to suggestions on page 115. In any case the grass will be improved by a dressing of fine manure; or common manure may be used, if the litter is afterward raked off. If the borders had a dressing of manure last autumn, it may be forked in, or fine compost may be applied and worked in now.

Annuals.—Except with the more hardy kinds, nothing is gained by sowing too early in the borders. All kinds may be forwarded in the hot-bed or cold-frame, or in pots in the green or dwelling house. Those which were started early and have made three or four leaves, may be potted. Those annuals which spring up from seed self-sown in the autumn, may be sown as soon as the frost leaves the ground. Among these are Larkspur, Portulaca, Candytuft, Gilias, Petunias, Whithavia, Sweet Alyssum, Pansies, etc.

Bulbs.—If the weather allows, these may be uncovered. Tall-growing Hyacinths and Crown Imperials will need stakes.

Climbers.—These add much to the beauty of a place, whether trained to cover fences, buildings, or running upon stakes and trellises. The Wistaria, Trumpet Creeper, and Honeysuckle are among those grown for their flowers, and the Virginia Creeper and Ivy for their foliage only. The annuals will be early enough planted next month.

Edgings.—Grass and Box are the most used. Both require care to keep them neat. Frequent use of the edging-knife is required for the grass. Shabby Box edging must be taken up and reset.

Frames and Pits.—Ventilate freely to prepare the plants for removal to the open ground.

Gravel Walks.—Remove weeds, supply fresh gravel where needed; rake and roll thoroughly.

Hedges.—Deciduous hedge plants, Privet, Hawthorn, Buckthorn, Osage Orange, etc., may be set.

Manure.—Give the borders a good dressing of fine compost, and do not neglect to manure the trees and shrubs on the lawn.

Perennials and Biennials.—Sow seeds of hardy sorts. Old roots of Phlox, Dicentra, etc., if divided and reset, will bloom all the better. Transplant Hollyhocks and Sweet Williams if not done in autumn.

Roses.—Plant early, heading back well to induce a strong growth. The June roses may be thinned out and shortened somewhat. The perpetuums may have the branches cut back to 3 or 4 buds. In purchasing, select those which flower freely on their own roots. There are some sorts which bloom better when grafted, but these will, in most cases, prove unsatisfactory to the general cultivator. Have some climbing roses. The Baltimore Belle is the best of these, but there are other good sorts.

Shrubs.—Thin, prune, transplant, and set out new stock. Give well prepared soil. See page 114 for notes on shrubs. Remove the covering from tender sorts protected in autumn, only after the weather has become settled.

Trees.—All deciduous trees may be planted for shade or ornament. They should receive the same care as a fruit tree. A pyramid dwarf pear, or a grape vine trained to a stake, as shown on page 110, may sometimes be introduced with good effect.

Green and Hot-Houses.

Fire heat may be discontinued in the hot-house, and dispensed with altogether in the green-house, except in unusually cold weather. Ventilate the green-house to prepare plants for removal.

Bedding Plants.—Pot off cuttings and in a few days remove to a cool-frame to harden, and continue to propagate Petunias, Verbenas, etc.

Bulbs.—Hyacinths and other hardy sorts which are through blooming, may be turned into the open border. Forward Cape bulbs in a light situation.

Camellias.—Prune into shape as soon as they are through flowering. Syringe freely, and keep clean. Propagate from cuttings.

Fuchsias.—These as they grow will need more water. Insert cuttings.

Insects will need to be kept in check. Frequent syringing and a damp atmosphere will kill the red spider. Aphis and others need tobacco smoke.

Inarching may be performed on shrubby plants. *Potting.*—Repot those plants which are to grow during the summer, unless they have room enough.

Pruning.—Thin out crowded plants, and head back feeble and straggling ones, and get a new start.

Seeds of green-house plants may now be sown. Covering too deep is one great cause of failure. Water all growing plants freely.

Cold Grapery.

The beginning of the present month is the usual time for uncovering vines in this latitude, though some do it the latter part of March. The vines are uncovered and suspended temporarily to the wires in such a manner that the top of the vine will bend downward. This will cause the buds throughout the whole length to break more evenly. The inside borders should be forked up, and the house should be syringed all over. If the vines have suffered during winter from excessive cold, or from not being properly ripened, they will show it by cracks which will soon begin to bleed. This trouble is usually manifested near the upper portions of the vine; if it proves serious and the upper buds do not start well, it will be necessary to cut the vine back, after a strong shoot near the lower part has grown some 18 inches. This shoot must be trained to replace the cane which was removed. If the vine is healthy, it may be tied up to the

wires, after the shoots have made a growth of 2 or 3 inches. Avoid drafts, and keep the temperature low (about 65°) until near the end of the month, when it may reach 70° to 80°, and the syringe be then used freely morning and evening, wetting the wood-work of the house, as well as the vines.

Apiary in April.

Prepared by M. Quinby—By Request.

In this latitude the labors of the season fairly commence with bees this month. They will range far and wide in search of pollen, honey not being yet obtainable to any extent. An untimely frost may destroy most of the flowers, and in such case care will be needed to prevent robbing. Unbolted rye flour spread in the vicinity of the hives, as recommended last month, will give employment, and at least a partial supply of food. In the hive, as in society, idleness is the parent of mischief; strong stocks not being in the fields, are very likely to make forays upon their weaker neighbors. Weak colonies may need guarding by contracting the entrances to the hives, so that only one bee can pass at a time. Robbing may be easily detected toward evening, when bees that should be quiet at home, are very busy pillaging from a weaker hive. Sprinkle flour upon them as they leave with their plunder, and they can then be readily followed to their own quarters. Do not mistake fighting for stealing; while there is contention on the outside of the hive, it is an indication of strength within, and contracting the entrance will usually be a sufficient precaution. To determine with certainty whether the bees are plundering, kill one or more of them as they leave the hive, and examine their honey sack in the abdomen; if it is full of honey the evidence is against them. If the bees from only one hive are stealing, change the stands, setting the hive of robbers in the place of the sufferers. If the entrance has been contracted, and the plunderers are so briskly at work as to threaten all the stores before night, close the hive at once. At sunset open the hive to allow the robbers to leave and those belonging there to retire. But should the robbers inside much exceed in numbers the others, you may keep them enclosed, and remove the hive to some dark room or cellar four or five days, by which time the raiders will take the oath of allegiance, and join in defending the common stores. If, during this time, the weather has allowed the bees to search and become discouraged in looking for more plunder, they may be returned to the stand; unfavorable weather for bees to fly might make it necessary to wait. When practicable, move them a mile or two away for a few weeks....Honey is needed by the older bees, and as this cannot yet be obtained in the fields, some colonies may need feeding; this may be ascertained and the matter arranged as directed last month. The labors of the hive will be greatly lightened and the health of the community promoted, by cleaning out all filth and refuse from the bottom boards, and removing dead bees from among the combs. If the combs have become mouldy from neglect, remove them as well as the decaying bees. The living inmates can be quieted for this operation by blowing tobacco smoke among them. Examine the floor of the hives frequently for moth worms, and destroy them. Wren boxes put up in the vicinity of the hives will be of much service in keeping the parent millers in check....Avoid opening the movable comb hives on cold mornings or in chilly weather, lest the brood be injured. Neither is it safe to open them in the middle of the day, in large apiaries, while the bees are flying, as it might expose them to robbery, at any time before flowers are yielding a full supply of honey....Leisure time may be improved in making or repairing any additional hives or boxes likely to be needed during the present season. After painting hives, time enough should be given for the scent of the paint to pass entirely away before introducing a colony. No patent arrangement can be of much service to those who cannot take time and pains to give proper attention to bees. The movable frames are valuable in facil-

tating many changes, which experienced apiarists find desirable. No arrangement will, of itself, secure a greater yield of honey, although with proper management practical beekeepers can prevent much loss, and thus increase the profits of the apiary....Those who desire the Italian stock should get queens from a reliable source with warranty of their purity. If any black worker-bees appear among the progeny, it is evident that the queen has coupled with the common drone, and the stock is, of course, hybrid. Whoever keeps Italians within three miles of the common species cannot be sure that his queens have met drones of their own kind, and if he warrants their purity, he may have to send several before his agreement is fulfilled....The movable comb hive will be found most convenient for the Italians, although it is possible, with more trouble, to use common box hives.

Select Catalogue of Garden Vegetables.

The following catalogue of kinds known to be good, is prepared for the *American Agriculturist* to enable those who have not had much experience, to make a selection from the many varieties offered by the seedsmen. There is as much difference in the quality of the varieties of some of the garden-vegetables, as there is in that of apples or other fruits. Good seeds of good sorts are the prime requisite in a garden, and it is much better to be at a little trouble to get them from reliable sources than to run the risk of buying a poor article from peddlars, or from unreliable variety stores. The postage on seeds is only 8 cents a pound. The surest way is to send to some of the dealers who advertise with us in their catalogues, and order seeds by mail.—This will but slightly increase the expense, and enable persons at a distance from large dealers to make a selection from their extensive stocks. Those marked as new, we have not tried, but they are recommended on good authority.

BEANS—DWARF OR BUSH: Early Valentine, for string or snap; Yellow Six Weeks, do, do.; Dwarf Horticultural, for early shelling. **POLE BEANS:** Large Lima, in warm locations; Small Lima, North of New-York.

BEETS.—Early Bassano, or Early Turnip; Long Blood, for main crop; Swiss Chard, fine for greens only.

CABBAGE.—Early York, small but early; Early Sugar Loaf, and Early Ox Heart, large and early; Little Pixie, a new early sort; Winningstadt, medium early, large, very hard heads; Flat Dutch, for Winter; Red Dutch, for pickling; Marblehead, Drumhead, very large; Green Globe Savoy, small, late, the richest of cabbages.

CARROTS.—Early Horn; Long Orange for main crop.

CAULIFLOWER.—Early and Half Early Paris, fine; Thorburn's Nonpareil, superb; Large Asiatic, fine, late.

CELERI.—Early White Solid, for earliest; Giant White Solid, for late crops; Incomparable Dwarf Crimson, new.

CORN.—Dwarf Sugar, small ears; Darling's Early, good; Stowell's Evergreen, and Asylum Sugar, fine, late.

CUCUMBERS.—Early Russian, small, early, and prolific; White Spined, best for table; Long Green, for pickles.

EGG PLANT.—Long Purple, early; N. Y. Purple, late.

ENDIVE.—Green Curled, for summer and fall salads.

KALE.—Green Curled Scotch, winter and spring greens. **KOHL-RABI, or "Turnip Cabbage."** LEEK. — Large Flag, for soups. **LETTUCE.**—Curled Silesian, for earliest; India Head and Ice Drumhead, fine; Butter, superior.

MUSKMELON.—Fine Nutmeg; Jenny Lind, very early; Green Persian, large and good; White Japan, the best.

WATERMELON.—Mountain Sprout, productive and early; Ice Cream, very fine; Black Spanish, fine but later.

ONION.—Large Red; White Portugal; Yellow Danvers.

PARSNIPS.—Hollow Crowned. The Student is new.

PEAS.—Daniel O'Rourke, extra early and fine, 2½ feet; Tom Thumb, productive, 8 to 10 inches; Bishop's Dwarf Prolific, 1 foot; Bishop's Long Pod, fine dwarf, 18 inches; Sangster's No. 1, 2½ feet, fine; Champion of England, for main crop, 5 feet; White Marrowfat, later and fine, 5 feet. Many new sorts are introduced this season but they need trial in this country.

POTATOES.—Ash Leaf Kidney, early, productive, and good; Early Cottage, is well recommended; Early Dykeman, is the standard sort around New-York.

RADISHES.—Early Scarlet Turnip; Long Scarlet Short Top; Scarlet Chinese Winter, good, and keeps late.

SALSIFY or Vegetable Oyster, very good.

SPINACH.—Round Leaved, for early; Prickly, for winter.

SQUASHES.—Summer Crookneck, best early; Yokohama, fine, early and late; Turban, excellent, autumn and winter; Boston Marrow, fall; Hubbard, best, keeps well.

tomatoes.—Large Round Smooth, early; Fejee, fall and winter, fine and productive; Pear Shaped, for preserves, etc.; French Tree, late, stocky, curious.

TURNIPS.—Early Dutch, very early; Red Top Strapleaf, spring and fall; Yellow Swedish, Rutabaga, to keep.

WINTER CHERRY.—For sauce and preserves.

Books for Farmers and Others.

(Any of the following books can be obtained at the office of the *Agriculturist* at the prices named, or they will be forwarded by mail, *post paid*, on receipt of the price. Other books not named in the list will be procured and sent to subscribers when desired if the price be forwarded. All of these books may be procured in making up a library. We indicate our opinion of their value by one or more Stars.

American Bird Fancier.....	\$0 25
American Farmer's Encyclopedia.....	5 00
American Weeds and Useful Plants.....	1 50
Allen on the Culture of the Grape.....	1 00
Allen's (R. L.) American Farm Book.....	1 00
Allen's Diseases of Domestic Animals.....	.75
Allen's (L. F.) Rural Architecture.....	1 25
Barry's Fruit Garden.....	.50
Bement's Poultryman's Companion.....	1 50
Bridgeman's Young Gardener's Manual.....	1 50
Bridgeman's Young Gardener's Assistant.....	1 50
Bridgeman's Kitchen Garden Instructor.....	1 50
Brunetti's Florist's Guide.....	1 50
Brock's Book of Flowers.....	1 25
Brown's American Poultry Yard.....	1 25
Bust's American Flower Garden Directory.....	.75
Burn's Vegetables of America.....	1 50
Chorlton's Grape-Grower's Guide.....	1 50
Cole's (S. W.) American Fruit Book.....	1 50
Cole's Veterinary Manual.....	1 50
Dodd's (H. H.) Modern Horse Doctor.....	1 25
Dodd's (Geo. H.) American Cattle Doctor.....	1 00
Dana's Muck Manual for Farmers.....	2 50
Downing's Cottage Residences.....	2 00
Downing's Fruits and Fruit Trees of America.....	1 50
Eastwood on the Cranberry.....	1 50
Employment of Women—By Virginia Penny.....	1 50
Every Lady her own Flower Gardener.....	2 50
Fessenden's American Kitchen Gardener.....	1 50
French's Farm Drainage.....	1 50
Field's (Thomas W.) Pear Culture.....	1 50
Fish Culture.....	1 00
Flint (Charles) on Glass.....	2 00
Flint's (W.) Cow and Dairy Farming.....	1 50
Foster's Strawberry Culturist.....	1 00
Fuller's Grape Culturist.....	1 00
Goodale's Principles of Breeding.....	1 00
Gray's Manual of Botany and Lessons in one Vol.***	1 50
Gray's How Plants grow.....	1 00
Guenon on Milk Cows.....	1 00
Hall's (Miss) American Cookery.....	1 00
Haraszthy Grape Culture &c.	1 00
Harris' Insects Injurious to Vegetation, plain.....	1 00
do. do. do. colored plates.....	1 50
Herbert's Hints to Horsekeepers.....	1 00
Hill's Land Management.....	1 00
Keen's Landscape Gardening.....	1 00
Lamprith on the Honey Bee.....	2 00
London's (Downing's) Ladies' Flower Garden.....	1 50
Letcher's How to Build hot-houses.....	1 00
Liebig's Lectures on Chemistry.....	1 00
Linsley's (D. C.) Morgan Horses.....	1 00
Manual of Agriculture by G. Emerson and C. L. Flint.....	1 00
Mavie's Illustrated Horse Doctor.....	1 00
McMahon's American Gardener.....	1 00
Milburn on the Cow and Dairy.....	1 00
Miles on the Horse's foot.....	1 00
Mistakes of Educated Men.....	1 00
My Farm at Edgewood.....	1 00
Norton's Annual Record.....	1 00
Norton's Scientific Agriculture.....	1 00
Our Farm of Four Acres... (paper 30c.) bound.....	2 00
Onion Culture.....	1 50
Parr's on Strawberry Culture.....	1 00
Parsons on the Rose.....	1 00
Pedder's Farmer's Land Measurer.....	1 00
Phantom Bouquet, or Skeleton Leaves.....	1 00
Phil's Grape Culture.....	1 00
Quinby's Mysteries of Bee-keeping.....	1 00
Randal's Sheep Husbandry.....	1 00
Reeds' Flower for Parlor and Garden.....	1 00
Richardson on the Dog.....	1 00
Richardson on the Horse.....	1 00
Robins' Produce and Ready Reckoner.....	1 00
Shepherd's Own Book, Randal & Yonatt.....	1 00
Skillful Housewife.....	1 00
Smith's Landscape Gardening.....	1 00
Spencer's Education of Children**	1 00
Stewart's (John) Stable Book.....	1 00
Tobacco Culture.....	1 00
Todd's (E.) Young Farmer's Manual.....	1 00
Tucker's Register Rural Affairs.....	1 00
Turner's Cotton Planter's Manual.....	1 00
Watson's American Home Garden.....	1 00
Watson's Household Science.....	1 00
Yale College Agricultural Lectures.....	1 00
Yonatt and Spooner on the Horse.....	1 00
Yonatt and Martin on Cattle.....	1 00
Yonatt on the Hog.....	1 00
Yonatt on Sheep.....	1 00
Younans' Chemistry.....	1 00
Younans' Household Science.....	1 00

Commercial Notes.

The following condensed, comprehensive Tables, made up to March 14th, show the transactions the past month.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days this m ^r th	201,000	46,500	147,000	6,100	91,000	222,000
23 days last m ^r th	306,000	26,500	191,000	6,500	93,000	283,000

SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days this month,	432,000	2,501,000	1,154,000	16,500	287,000	
23 days last month,	415,000	3,391,000	1,588,000	13,400	98,500	

2. Comparison with same time last year.

RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days 1864...	201,000	46,500	147,000	6,100	91,000	222,000
24 days 1863...	235,000	41,000	173,000	57,000	78,000	294,000

SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
24 days 1864...	432,000	2,501,000	1,154,000	16,500	287,000	
24 days 1863...	330,000	1,810,000	2,031,000	139,000	121,000	

3. Exports from New-York Jan. 1. to March 16.

Flour.	Wheat.	Corn.	Rye.	Oats.	
bbls.	bbls.	bbls.	bbls.	bbls.	
1864....	300,081	9,076,924	51,905	255	5,307
1863....	514,740	8,156,890	1,398,054	59,106	96,382
1862....	619,675	2,691,781	2,712,801	305,005	6,408

The Current Price Table shows the present value of the principal agricultural Products, with variations from last month. There has been little excitement in the

Breadstuff Markets during four weeks past, the prices rising, and falling with the premium on gold, which, on March 9th rose to 160, but is again down to 160. The foreign demand for Breadstuffs is fair, about consuming the surplus in market.... Wool was depressed for a time, but is more active now.... Provisions are not in large supply, and are firmly held.... The Markets of all other kinds of produce are steady at the quotations below.

CURRENT WHOLESALE PRICES.

February 18, March 15.

FLOUR—Super to Extra State	\$6 25	@ 7 20	\$6 30	@ 7 10
Super, to Extra Southern	6 5	61 00	7 00	61 00
Extra Western	6 5	61 50	6 75	61 00
Extra Genesee	7 25	9 25	7 15	9 00
Superior Western	6 39	6 50	6 30	6 35
LYN. F.	5 50	6 50	5 50	6 30
CORN MEAL	5 25	6 25	5 25	6 20
WHEAT—All kinds of White	1 50	1 50	1 50	1 50
All kinds of Red	1 56	1 55	1 49	1 74
CORN—Yellow	1 20	1 24	1 25	1 27
Mixed.....	1 27	1 26	1 31	1 31
OATS—Western	91	92	90	91
State.....	90	92	89	90
RYE.....	1 28	1 33	1 27	1 30
BARLEY.....	1 20	1 45	1 28	1 55
COTTON—Middlings, per lb.	81 1/2	88	77	78
HOPS, crop 1863, per lb.	25	35	28	32
FEATHERS—Lb. Geese, p. lb.	63	68	65	65
SPICE—Cover, per lb.	14	14 1/2	15	14 1/2
Timothy, per bushel.....	3 00	3 25	3 00	3 25
FLAX, per bushel.....	3 25	3 30	3 37 1/2	3 35
SUGAR—Brown, per lb.	11 1/2	15	12 1/2	15 1/2
MOLASSES—New-Orleans, p.g.l.	65	75	68	70
COFFEE, Rio, per lb.	33 1/2	34	33	35
TOBACCO—Kentucky, &c., p. lb.	15	35	15	35
Seed Leaf, per lb.	16	50	16	50
WOOL—Domestic fleece, p. lb.	72 1/2	85	63	83
Domestic, pulled, per lb.	65	78	60	77
Wool, California, unwashed.....	25	55	25	55
TALLOW, per lb.	12 1/2	12 1/2	12 1/2	15
SOAP—Olive, per lb.	40	55	45	60
POKE—Medicinal, bbl.	21	25	22	25
PRUNE—Peach, per bbl.	10 1/2	12	10	12
BEEF—Plain mess	12 25	14 1/2	13 00	15 50
LARD, in bbls., per lb.	13	14	13	15
BUTTER—Western, per lb.	24	30	25	30
STATE, per lb.	24	34	32	40
CHEESE.....	13 1/2	17	15	18
BEANS—per bushel.....	2 60	3 00	2 60	2 80
BROOM—Corn, per lb.	.08	.10	.08	.10
Eggs—Fresh, per dozen.....	28	24	26	27
Eggs, Limed, per dozen.....	22	24	20	21
POULTRY—Fowls, per lb.	16	18	15	18
Ducks, per lb.	18	20	18	22
Geese, per lb.	20	22	11	23
Turkeys, per lb.	16	20	17	20
POTATOES—Mercers, p. bbl.	2 25	2 50	2 25	2 50
Buckeyes, per bbl.	1 75	1 50	1 75	1 75
Peach Blow, per bbl.	2 00	2 25	1 75	2 00
Nova Scotia, per bushel, per bbl.	50	60	55	65
TURNIPS—Rutabaga, per bbl.	1 00	1 25	1 00	1 25
ONIONS, Red & Yellow, per bbl.	5 00	5 00	6 00	6 00
CABBAGES, per 100 lbs.	8 00	11 00	7 00	11 00
DRIED APPLES, per lb.	08	11	7 1/2	11
DRIED PEACHES, per lb.	24	25	25	28
DRIED RASPBERRIES, per lb.	24	26	24	25
APPLES, choice, per lb.	3 00	3 25	3 15	3 00
Apples, second lots, per lb.	2 00	2 25	2 00	2 00
RAISIN BERRIES, per bbl.	2 00	6 00	4 00	9 50
RAILROAD CHICKENS, per pair.	44	50	45	55

any until August. We have 50,000 to 60,000 names entered for them, which will probably all be supplied in August and September, beginning in the order the names stand on the subscription books. If the growing season proves favorable, probably a good many thousand more may be supplied. Every subscriber for the entire present volume, who desires the plants, will be supplied as early as may be, if the 5 cents for postage and packing material be furnished; but late applicants *may* have to wait over—we hope not.

Boxes for Mailing Plants.—The note last month has called out at least a score of ingenious contrivances, and more are constantly coming in. The plans already received make it certain that a form will be brought out which will be of great value, not only in the mailing of our own strawberry plants securely and conveniently, but one which will be of great practical use to the country. A simple, cheap packing-box will put it in the power of residents at the most distant points to receive almost all varieties of plants cheaply and safely by mail from any part of the country. When the best form is developed, we shall publish an engraved description.

Names Wanted.—Letters enclosing money for the *Agriculturist*, or for books, sometimes come without address, and sometimes without signatures. In either case we cannot be blamed for not filling the order. Names are wanted for letters from Siloam, N. Y., Reading, Pa., Westerville, O., Homer, O., Coulterville, Ill., Erwinia, Pa., Wolcott, N. Y., Newville, Pa. Other letters are to be sent to the *Agriculturist* at the post office, and we hope to receive them at the earliest opportunity.

Tobacco Culture—Onion Culture.

These two books are models of what might well be published on each important topic of agriculture and horticulture, and they far surpass any thing else published on the same subject. The *Tobacco Culture* contains the plain, practical directions, as given by 14 experienced growers residing in different parts of the country, who each aim to give in a clear style, all the particulars, from selecting seed and preparing ground, to curing and marketing the crop. Not a necessary item is omitted. The modes of curing, packing, etc., are shown by engravings. We send it post-paid, to any address, for 20 cents; it is worth its weight in silver to any one raising the smallest plot of Tobacco.—The *Onion Culture* is on a similar plan, containing in brief space, as the subject is less difficult, the directions of 17 experienced growers. It will be found very valuable to every one raising even a small plot of onions, while it shows the profitable modes of growing on a large scale. We send it post-paid for 20 cts.

The Grape Culturist.—by A. S. Fuller, the well known Practical Horticulturist. This long promised work is at length issued. It forms a neat volume of over 260 pages, and is amply illustrated with upward of 100 engravings. This treatise covers the whole ground of garden and vineyard culture, from starting the plants from eyes or cuttings, to the established fruiting vine. The whole is told in a plain style and from the author's own experience; his system of pruning is very simple and easily understood, and the reasons are given for preferring it to others; he, however, gives the other modes in practice, and illustrates the whole in the most liberal manner. The descriptions of varieties are brief and pointed, and the list of valuable sorts is properly made very brief. The volume contains a list of all the works upon the grape heretofore published in this country. This most useful manual, will be equally valuable to the one who cultivates a single vine, and to the vineyardist. We can send it post-paid by mail, on receipt of price, \$1.25.

Sundry Humbugs.

Our drawer for these is crammed full of letters, circulars, etc., from all parts of the country, but we are again without any room for details. Here are a score of different "Prize Packages;" Jewelry, sold for 25 cts., to \$1 each, without regard to value, (called \$5 to \$500 each,) or 100 parcels for \$15 to \$20 and a silver (?) or a gold (?) watch thrown in. A lot of these examined, we find made up of the trashiest stuff. Don't touch them—neither "soldiers," for whom they are put up, nor others. Here are some fifteen different "agencies" of various lotteries in Kentucky and elsewhere, which will be non-come-at-i-bus when they get your money.—"Confidential" Coupons for Jewelry prizes, etc., from M. B. Dean, and Lindsay & Co., (some of them sent on to us for collection).—A lecturing "Professor" on Fruit Trees.—Alexander Van Witter, of Cairo, N. H., who offers to lie about a ticket in some sham lottery.—The Franklin Musical Benefit Association.—The "express package" waiting for the owner to send the swindler money for expenses.—Madame Somebody's embroidery depot, with jewelry premiums.—Ticket "1649" again; this time from Alexander Thompson, of Canaan, Me.—Cure for Intemperance.—"Splendid engravings," with jewelry and other prizes, etc., etc., etc., etc.

Basket Running Over—Personal Letters.

—Scores of queries are answered in the Calendar, Basket, and other parts of this paper, without referring to the letters directly.—Still, many other items ready prepared, are crowded over to next month, by the lengthy Calendar of Operations required at this opening season of work.—Letters asking personal information are too numerous to be answered "by first mail"—if at all. We can not give advice for pay, on patent matters, implements, etc.,—having not a spare hour to sell at any price

Are Oats a Poor Crop to Raise?—The Ohio Farmer quotes the opinion of two first-rate cultivators "that oats are the meanest grain raised; that the yield is very uncertain, one of the hardest crops for land, and when raised they are not intrinsically of as much value for stock feed as other staple crops." Let us have the facts, pro, and con.—theories can be made afterward.

Hen Manure for Corn.—"A. W. C.", Fond du Lac Co., Wis. Mix hen manure well with an equal bulk of earth, and put a handful to each hill at the first hoeing. As you have plaster it may be used quite liberally with the earth. Leached ashes may be used with the manure; unleached should be applied alone.

Hop Culture.—This plant may be profitably raised on any good corn land, but it should be well enriched. A southeastern exposure is preferable, and a hill or wood in the direction of prevailing high winds essential. The ground should be deeply plowed, harrowed fine, stones and sods taken off or buried, rolled, and marked off five feet each way. The hop plants are male and female. In planting, every eighth hill in every eighth row is set with male plants. The sets are underground stems taken off with a spade near the hills in an established hop yard, cut in pieces of 5 or 6 eyes each. Male and female sets are kept separate, and 3 bushels to an acre is the quantity used. The planting of a new yard should be made as early as the land can be well prepared—before the first of May if possible.

Hops—Wild and Cultivated.—W. S. Van Meter, Coles Co., Ill. The hop grows wild over a large part of the United States. Cultivation has given rise to several well marked varieties, some of which are doubtless more productive than any wild ones likely to be found. Still for family use the wild are very good.

Origin of the Potato.—H. F. Sharer, 3d Army Corps. The potato is native of various portions of tropical America. There is some doubt as to who first introduced it into Europe. It is said that Sir Walter Raleigh took it to England in 1586, while others suppose that it was sent from Peru to Spain much earlier.

A Potato Planter.—An implement for cutting and planting potatoes was recently exhibited before the Maine Board of Agriculture, who appointed a committee to examine and report upon its merits. One of the members (not on the committee) commends it as worthy of attention. We shall hear more of it, if it plants successfully. The cutting needs intelligent skill.

Application of Manures.—The best mode of using manure was discussed at a recent session of the Maine Board of Agriculture, and most of the members gave their experience in favor of applying it near the surface, slightly covering with plow or harrow. This accords with experiments made under the auspices of the Massachusetts Ag'l Society, as noted in the *Agriculturist*, Vol. XXII, page 234; August number, 1863.

Home Made Fertilizers.—William, residence not given, states that he highly manured an acre of garden and sold \$29.50 worth of manure, from the accumulations of a family of three. Will he please state how he did it, and the value of the whole product?

Will White and Red Clover and Blue Grass succeed in Iowa? H. A. Stiles. The clover will, doubtless. Blue grass will probably not do so well as further south. We shall be happy to hear from readers of the *Agriculturist* experienced in this matter.

Pumpkins vs. Squashes.—"Which is the best feed for stock, pumpkins or squashes?" "W. L." Kalamazoo Co., Mich. The names pumpkin and squash are convenient to distinguish between the coarser and finer kinds of this fruit. Neither can we say that under "pumpkin" we include all the coarse kinds, for some of the great "squashes" so-called, have the coarsest flesh of the pumpkin family. No accurate distinctions can be made between them. So we should say: when there is no obvious difference in the quality, thickness, sweetness and fineness of flesh, thinness and want of bitterness in the rind, then that kind is best, which produces most pounds, whether called by one name or the other.

Horses Wanted.—According to the statements in General Halleck's last report, the cavalry service of the army, on an average, requires horses enough to remount the whole force once in two months. At this rate, some 400,000 horses will be needed the present year. The low grade of the animals furnished in many cases, accounts for their speedy breaking down; want of proper care ruins more, and the balance are used up by service

and the fortunes of war. The horse market promises to be pretty good in this country for a year or two to come.

Spring-halt in Horses.—A nervous affection for which there is no cure known. At times it is more violent than at others, but a horse that once has it thoroughly never recovers. It is usually observed more at starting than subsequently, and in many respects is like St. Vitus' Dance or chorea in the human subject.

To Stop a Runaway Horse.—A subscriber in Rippowam, Conn., sends the following: "Take a small but strong cord, the one end into a loop (not a slip noose), pass it over the horse's head, and attach it rather loosely to the throat latch, so that it will not fall down too low. The other end of the cord is passed to the carriage within easy reach of the driver. When the horse runs, and can not be stopped by the reins, pull upon the cord, hard enough to stop his breathing; he will soon stop—indeed he must stop. So soon as he stops, slack up the cord and quiet him by soothing words and kind treatment. There is no danger of his falling, as he will stop long before he becomes exhausted, and will brace himself on his feet so long as he has strength—the cord being slackened as soon as he stops, will relieve him. This simple remedy may be applied to any horse which is in the habit of running away; he will very soon connect cause and effect together, and after a few trials, will be entirely cured. Kicking, backing, and other vicious habits yield to the same remedy when judiciously employed. I hope your readers may not only try this plan but report the results in the *American Agriculturist*."

Root Grafting.—A subscriber at Chester Co., Pa., writes that he considers this method as having two advantages over budding. The graft placed partly below the surface will throw out roots of its own, and add to the vigor of the tree; and the roots being taken out of the ground to be grafted, they can be inspected and all diseased or deformed ones rejected. The writer states that with him the roots of apple seedlings have become much diseased, some of them covered with a species of aphid, and others with warts, which when cut open show a watery, semi-transparent substance, having an unpleasant odor. He wishes to know if the disease has appeared elsewhere, and the cause and remedy. "Green One." The cuts on page 20 (January) represent simply a tongue cut upon the slope of the stock and graft. There is no piece cut out, but the tongue is represented as lifted, to show its form more distinctly.

Downing's Mulberry.—E. E. Brown, Jones Co., Iowa, and J. C. Bowers, Warren Co., N. J. This is fine flavored, but too soft for marketing; probably not hardy in Iowa. Some western writers put this down among the humbugs. It is good around New-York. Everything depends upon climate. To be had at nurseries,

Transplanting Old Fruit Trees.—J. Rucklas, Adams Co., Ind. Almost any tree can be successfully transplanted, provide sufficient care be taken to keep the roots uninjured, and afterward to prune properly. Where, however, the trees are of large size it is usually much better to set out young trees and wait for the growth; they will be more profitable in a few years.

Tree Protectors.—In reference to those noticed on page 37 (February), Mr. E. T. Bouthorpe, of Norfolk Co., Mass., says he has used protectors of the exact pattern there described, but made of zinc. They were eight inches long and twice the size of the tree. The protector was set for half its length in the soil and the space between it and the tree was loosely filled with dirt. When used on young growing trees, the protector should be taken up once or twice during the season to prevent the earth from becoming packed by the growth of the tree and bursting the joint. Mr. B. considers these metallic tubes as a perfect protection from the borer and has not been able to discover a trace of one upon trees thus guarded.

Borers—Unhealthy Trees—Early Dropping Fruit.—There are so many letters asking upon these subjects that we can only give a general answer. If trees are unthrifty in good soil and with good culture, and if fruit fails to perfect without any assignable cause, it is highly probable that borers are at work. These are usually in the trunk of the tree near the ground. The first thing to be done is to get rid of the insects which have already penetrated the tree. Examine the trunk carefully, close to the roots, removing the soil for the purpose, and if any holes are found probe them with a piece of whalebone and crush the insects. Having made thorough work with these, then measures should be taken to prevent the access of any others. Various preventives have been suggested and they are all alike in principle, which is to oppose some obstacle to the parent insect and

prevent it from depositing its eggs. One piles stones around the base of the tree, another puts a mound of ashes there,—others use a wrapping of paper, cloth or tanned paper: a coating of grafting clay has been recommended, and lastly we have the tree protectors noticed in another item, and in the February *Agriculturist* on page 37. No doubt that either of these would prove effective if properly applied. Whatever is used, the protection should extend around the trunk several inches below the surface, as the borer often penetrates the trunk below the surface, and works several inches or even a foot above it.

Double Working of Pears.—H. Ziemeyer, Cass Co., Ill. Some varieties of pears which do not succeed on quince stocks, can be made to do so by budding or grafting them into some other variety which is already on quince and which is known to grow well on it. Such a pear tree is said to be "double-worked."

Quince Trees that Drop their Fruit.—"D. B.", Williams Co., O. Possibly your trees are troubled with borers. Examine the trunk around the roots, and if any holes can be found, probe them out and head back the trees and thin the head. Do not let suckers grow from the base of the trunk, to exhaust it.

Black Knot in Plum Trees.—C. H. G., Philadelphia, has several trees affected with black knot, and wishes to know if it will do to graft them. This will depend upon how far the knot has affected the vigor of the tree. If the trees are generally healthy, and the knot only on the small limbs, we should graft them. The knot is a parasitic plant and not a disease, though if present in abundance, it will make the tree unhealthy. All affected limbs in the vicinity must be cut off and burned, or it will soon become established on the grafts.

"Winter Currents."—E. W. Knight, of Warren Co., N. Y., reports a variety of currant which retains its fruit until after a number of hard frosts. If picked in season they keep fresh until mid-winter. Not knowing the variety, we would like cuttings for trial.

Depth to set Fruit Trees.—D. D. Smith, Rhode Island. Four inches below the surface is fully deep enough to set the upper roots of fruit trees. If you fill in around growing trees to the depth of six inches, they will probably receive a severe check as this will bring the roots too far from the surface warmth and air.

Evergreen for Hedges.—J. S. Parks, Blue Earth Co., Minn. The Norway Spruce would probably answer your purpose better than any other evergreen. Thorburn & Co., of this city, advertise the seeds and they are doubtless kept by other large dealers. But two or three years' time is saved by buying the plants, which are advertised cheaply every year.

Hedge Plant for New-Jersey.—C. H. Perrine, Mercer Co., N. J. We should be disposed to try the Honey Locust in your locality. The plants can be started from the seed which is sold at the stores. They should be soaked in warm water for 12 hours before sowing. A fine specimen of this hedge can be seen at Reid's nursery, at Elizabeth, N. J.

Arbor Vitæ for Hedges.—E. A., Southington, Conn. This makes a good shelter, but is not a very strong hedge to turn stock; will grow in any good soil. It should be planted two or three feet apart, and trimmed to the desired form in early summer. Sometimes the plants will die out without any apparent cause, and leave a gap which is difficult to fill. For this reason the Norway spruce is preferable, and it bears pruning remarkably well.

Dwarf Apples.—Geo. W. Sear, of Tioga Co., Pa., says the Paradise stock is of "no account." Apples grafted on the Doucain stock will give slow growing, partly dwarf trees, which may be pruned to a pyramidal shape, but which give fruit no sooner than standards. In his opinion the best stock for dwarfing the apple is the common wild crab, which by hardness and every other good quality, is perfectly adapted to the purpose. It should be grafted or budded at the collar. "The varieties succeeding best on the Doucain are Early Harvest and Red Astrachan, for early; Late Strawberry, for autumn; Baldwin and Wagener, for winter. The last named is the best of all."

Caper Tree.—Miss E. F. Brown, of Long Island, referring to a note in the December "Basket," sends a specimen of what is called "caper tree" there. The plant sent is *Euphorbia Lathyris*, or Caper Spurge, a biennial about 2 feet high, sometimes cultivated for ornament. It belongs to a very poisonous family, and we doubt if the pickled seeds would be a safe article of food.

Grapes in Spring.—A box of fine, plump Catawba grapes in prime condition received from Josiah Carpenter, commission merchant of this city, March 1st, proves conclusively what has often been asserted, viz.: that grapes can be kept in good condition until spring. Mr. Carpenter receives and sells about 300 lbs. of similar grapes per week, for J. W. Prentiss, of Steuben Co., N. Y. They bring 30 cents per lb. wholesale, and often 50 to 60 cents at the fruit stands on Broadway. Mr. P. keeps them in an even, cool temperature, and sends them to market in mild weather packed in thin wooden boxes 1 foot long, 10 inches wide, and 6 inches deep, (10 lbs. per box) with coarse paper for a lining.

Injury to Grape Vines by Cold.—Dr. H. Shroder, of Bloomington, Ill., sends the result of his examination of his vineyard. All his vines which were protected by a covering of litter escaped injury. The Catawbas—except some on sandy land, with a southern exposure—were killed to the ground; some of the vines on trellises, which were thrown down by a storm, uninjured. Dr. S. thinks that the Catawba cannot stand over 22° below zero in quiet weather, and with such a storm as that of last January, 18° below is all they will endure. His last year's plantings of single-eye Delawares were entirely killed, as well as the Isabellas. With the thermometer ranging from 23° to 29° below zero, the following varieties proved hardy: Hyde's Eliza, Taylor, Mary Ann, Naumkeag, American Hamburg, Raisin, Empire, Marion, Sage, Urbana, Michigan Mammoth, Hughe's Wine Grape, Garrigues, Mottled, and the Concord. Like all western cultivators, Dr. S. speaks in the highest terms of the Concord. The grapes enumerated by Dr. Shroder as being hardy, are, except the Concord, not considered worth cultivating in this region.

Grape Queries.—C. H. G., Philadelphia, and H. Z. Bolivar, Md. Vines 6 or 8 years old are seldom worth moving, especially if they have been neglected. Make layers of last year's wood and remove them when rooted, or get new vines at once....T. P., Alleghany City. A layered vine well rooted is just as good as one obtained in any other way. Most of the layers sold are carelessly made, and unless sure of the quality, it is safer to buy vines started from cuttings....H. Eaton, South Reading, Mass. Directions for grafting the grape were given in the September *Agriculturist*. It is best done in autumn, but may be done very early in spring....George J. Yost, Columbia Co., Pa. The circular trellis made according to plan sent, may answer as an ornament, but as it does not allow the vine to be trained upon any regular system, is not to be recommended....W. N. Cooley, Hampden Co., Mass. A strong vine four years old and properly trained ought to bear 75 bunches, the weight will of course depend upon the variety....H. Trimleyer, Cass Co., Ill. The varieties of grapes inquired about are many of them so new, and their cultivation restricted to so few localities that it is impossible to say how they would do with you. An account of the others is given in a letter from Mr. Husmann, on page 114. The Anna, as far as known, is a first class fruit. The Anna has some good qualities, but it has so many bad ones, among others its late ripening, that many cultivators have discarded it.

Testing Seeds.—By trying field and garden seeds before sowing, much disappointment may often be prevented. All doubtful seeds, whether left over from former years or recently purchased, should be proved. This may be done in several ways: Count a portion of seed and plant it in a box or pot of fine soil kept damp in a warm room. The number of plants which appear will show the proportion of good seed. The same result may be obtained by placing the seeds between the folds of a damp cloth and putting this between two plates to prevent evaporation; or by tying them in a cloth and burying them in the soil of a hot-bed. The seeds will sprout in a few days, and thus show the proportion of good ones.

Cold Frames, etc.—To "Subscribers." A cold frame is like a hot-bed without the manure to create heat. It is set directly on fine mellow soil. The heat is derived from the sun, and the heat as well as moisture are kept in by the glass. It is of great help in forwarding seeds, but they should not be planted until April. A *Hand-Glass* is a small contrivance for a similar purpose, made with glass top and sides, or of a wooden box with a pane of glass at the top. A *Cold Pit* is a sunken frame covered with sash in which half hardy plants are kept during the winter.

Transplanting Boxes.—A note in the Feb. *Agriculturist* has called out a number of suggestions. H., of Quincy, Ill., uses cylinders of sheet zinc, 4 inches high and 3½ inches in diameter. These are without bottoms, and are set closely in a shallow box of convenient

size, filled with soil, and a few seeds put in each.....A. Ricker, Hancock Co., Me., makes boxes of ¼ stuff, 6 in. long and 3 inches wide and deep. These are made without bottoms and are set on pieces of board large enough to hold six boxes. The boxes are filled with earth, the seeds planted and the whole set under glass to start. In transplanting, the board with the boxes is taken to the place, a hole is made large enough to receive a box, one is slipped off into the hole and the earth drawn around it. The box is loosened with a few slight raps and lifted out, leaving the roots undisturbed. Mr. R. starts peas, corn, squashes and cucumbers in succession in the same boxes....H. G. A. A., of Mystic Bridge, Conn., uses a box 18x26 and 20 inches high, sloping like a hot-bed frame. This is covered with sash and has a movable bottom. Any of these contrivances may answer the purpose where flower pots can not be obtained, but we do not see that they possess any advantage over the latter.

Horse-Radish Roots.—E. Haynes, Cuyahoga Co., O., dug a horse-radish root striking down 4 feet perpendicularly and farther, for when breaking off at that point it was as large round as his little finger.

Tomatoes and Peach Borers.—J. G. Robinson, Cambridge, Md., says that he finds that peach trees near which tomatoes grew, were entirely free from borers, while other trees in the same garden were much injured, two of them being killed by the borers.

Fine Mushrooms.—Simpson Gordon, of Vanderbilt Avenue, Staten Island, is very successful in cultivating this luxury. Magnificent specimens grown by him have been placed upon our Exhibition Table, during the past month, as well as samples of very vigorous looking spawn. Some mushrooms grown in flower pots attracted much attention. He has left some spawn cakes for sale at Lane's Purchasing Agency.

Strawberry Notes.—H. L. Frontenau, wishes to know if it will do to plant strawberries in sandy loam where a quantity of stable manure has stood. Yes, if the ground is well worked ...Wm. Cottew, La Salle Co., Ill. The "Tribune Strawberries" are not a humbug. They are all of good quality, here at least....J. A. Ruggles, Bristol Co., Mass. You will probably find the runners between the old and new plants already disconnected, or at least dead. Take up the new plants and put them elsewhere and keep the runners from both new and old, if you wish to get the best crops....Geo. W. Sears, of Tioga Co., Pa., states that after trying some thirty varieties, he can get all desired results from two sorts. He recommends the Jenny Lind for early, and Triomphe de Gant for the main crop; or instead of these, the Bartlett and Austin; or Early Scarlet and La Constance. The Wilson he discards as being too sour and uneven in size. The Honeye is with him as productive as the Wilson, and a better berry.

The Jonquils do not Flower.—H. N. Adams, Cheshire Co., N. H., is troubled by the blasting of buds. This is generally a free blooming plant. The trouble may arise from a late frost, a weakness of the plant, or from the crowding of the roots. Try covering with litter, and keep it until the weather becomes settled. If they have been a long time in the earth, take them up when the leaves have withered, and keep them out of the ground until October, and then set them singly. Some make the mistake of cutting off the leaves as soon as the flowers fade; this is wrong, as it weakens the bulbs.

Sowing Auriculas.—L. Bischoff, Fond du Lac, Wis. These are to be sown in pots or boxes of fine rich earth, and covered very shallow; place in a gentle hot bed. When up, the plants need to be shaded from the hot mid-day sun, and to have plenty of air.

Hybrid Perpetual Roses.—Several who have asked for a list of roses, will find in the following a selection of the best growers, and those which can be obtained at most nurseries: Alexander Bachmentoff; Auguste Mie; Barronne Prevost; Cardinal Patrizi; Duchesse de Cambaceres; Enfant du Mont Carmel; General Jacqueminot; Glory of France; Jules Margotin; Lady Stewart; Lord Raglan; Madame Rivers; Pius IX; Triumph of the Exhibition.

"The Seed Humbug."—A Subscriber in Pittsburgh, Pa., wishes the *Agriculturist* to pitch into gardeners and seedsmen in general, because they advertise floral novelties with attractive descriptions, which upon trial disappoint those who have been at the expense and trouble of procuring and growing them. If any reader of this paper has gone rashly into untried new things, he has done so against often repeated advice, and can not blame us. Nor do we consider the seedsmen at fault

for selling an unsatisfactory new plant, any more than the bookseller is for selling an uninteresting new book. Both dealers send orders to Europe for a supply of every new thing in the line of their trade, and new seeds as well as new books are sold by their titles. Many of the seedsmen are careful to state in their catalogues that the descriptions of new varieties are taken from their foreign growers. Among the new things introduced each year there are some really valuable, while others, and it may be a majority, are worthless. Every one who tries new flowers, vegetables or fruits, runs a certain risk, and he has his choice to do this, or wait until some one else has proved the things for him. The regular seedsmen as a class are honorable dealers, and have no desire to deceive; they give the best information they can get about their wares, and if they do not equal the expectations of the purchasers, the seller is not always censurable.

Carrot Seed.—How to Clean.—H. A. Cook, Columbia Co., N. Y., wants to know how to remove the burr from carrot seed. Most of the seed (all the American seed we believe) comes to market with the burrs on. It is said that the seed may be cleaned by subjecting it to hard rubbing in a bag with sharp sand.

Black Currant Beverage.—Messrs. Shimer & Gregory, Carroll Co., Ill., write to the *American Agriculturist* that an excellent fermented drink (sometimes mis-called wine) may be made from black Naples, and black English currants, superior to the fermented juice of most other fruits, except grapes. The bushes are easily cultivated and yield abundantly, and the fruit gives a very rich juice....Mrs. C. H. Freeman, Bay Co., Mich., uses 1 qt. Black Currant juice, 3 gallons water, and 16 lbs. good sugar.—Says that this currant will pay to cultivate, if well manured and cared for. She gets 50 per cent more juice than from any other currant....C. W. Kellogg, of Monroe Co., Wis., takes equal parts of black and red currants, and uses the compound juice as above; considers the result better than from the red

Poisoning by "Rye Coffee."—W. B. Waldo, Dutchess Co., N. Y., sends an account of the severe illness of a German, his wife and four children with all the symptoms of poisoning by ergot. It was found that the family had been in the habit of drinking copiously of "rye coffee" three times a day, and the ill effects were, with strong probability, attributed to the presence of ergot in the rye used to make the drink. Ergot was figured and described on page 105, April *Agriculturist* of last year. People drinking rye coffee, should prepare it themselves and be sure that it is free from ergot.

Australian Coffee.—Several inquirers, This is nothing but a kind of chick pea, raised in large quantities in some sections of the West, and extensively advertised under various names. \$1 per hundred seeds as asked for it, if obtained, would make it a profitable crop. We once paid 2 cents each for 50 kernels to find out its nature. It is one of the humbugs.

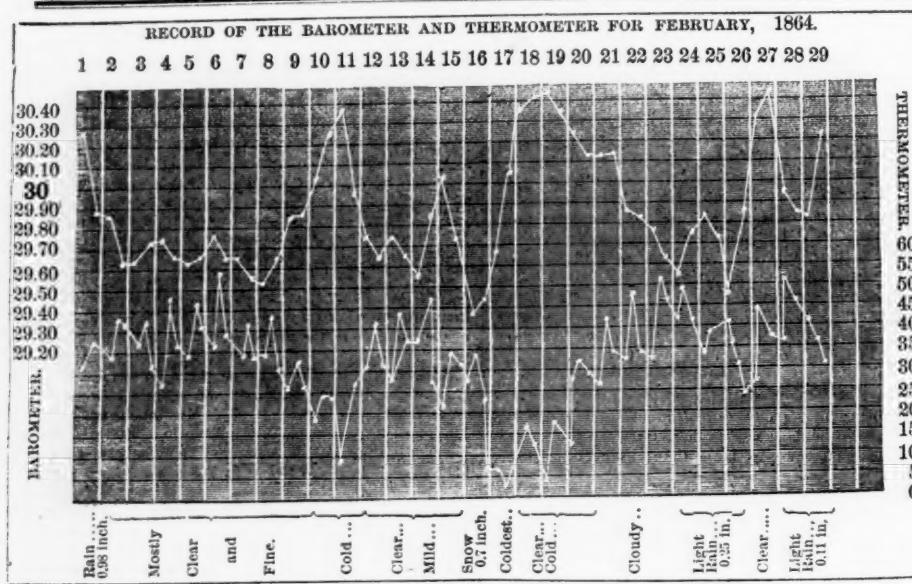
Saleratus for Insects.—Wm. Cottew, La Salle Co., Ill., writes to the *American Agriculturist* that if smoked hams be washed clean and rubbed well with saleratus, a coating will be formed which insects will not penetrate. We have not tried it.

Mich. State Agricultural College.—This institution has opened its yearly session under better auspices than ever before. Its corps of professors are earnest working men, and the facilities for imparting a good English and scientific education are ample. It will be seen by reference to the advertisement published last month, that students from other States are admitted at a moderate charge. Circulars may be had by addressing the President, Prof. T. C. Abbot, Lansing, Michigan.

The Farmer's Oracle.—This is the title of a weekly agricultural paper, published at Spring Lake Villa, Utah Co., Utah. Though of moderate size, and as yet printed on indifferent material, it is evidently wide awake. It makes good selections from other papers and keeps up with local matters. Success to it.

Western Colony.—The Ottawa Indians of Kansas, among whom are several readers of the *Agriculturist*, want to sell 30,000 acres of their reserve to actual settlers, and have delegated their U. S. Agent to collect colonies of moral people to go out in April. His address is Box 3949, New-York.

Botany for Children.—C. Phillips, Waterloo Co., Iowa. The best child's book on botany is Gray's "How Plants Grow." It is as simple as a story-book, and is a most excellent elementary work. Price by mail, \$1. Dana's Elementary Mineralogy, is a standard work, but not suited to very young children, nor do we know of any one on the subject that is thus adapted.



NOTES.—Light falls of snow on 3d, 8th, 9th, 17th; slight rain-fall on 2d, 14th, 24th, not measurable—Zodiacal light clearly observed, 5th and 9th.—Aurora Borealis on 12th.—Lunar Halo on 21st.—Two Rainbows on 24th.—The amount of rain and melted snow is given in the table at the times on which it fell. The very accurate reports we now give, are furnished us by Prof. O. W. Morris, of the Deaf and Dumb Institution in this city. A parallel system of observations is taken at the Office of the *Agriculturist*, but situated as it is in the heart of the city, they are necessarily less accurate, owing to local influences.

Have You Tried Pots for Plants?

We have often urged in the columns of the *Agriculturist* the great advantage and economy of using small earthen pots for starting all kinds of garden stuff, flowers, etc. The smallest sizes can be bought in many localities for 60 cts. to \$1.25 per 100, and they will last many years. Fill a large number of these with earth, and plant one or more seeds in each. Set them on the warm side of a fence or building; water as needed, and cover on cold nights or days with old carpets or blankets, or with straw. If this be done two to four weeks in advance, the earth, with the well-started plants, may be transferred to the open ground as soon as it is fully warm, and the growth will hardly be checked. With a very little trouble one may thus get a good supply of early vegetables, two to four weeks in advance of open ground sowing or planting. Peas, corn, cucumbers—in short, every kind of vegetable and flower, may be started thus. By inverting the pot—with the hand upon the earth, the plant passing between the fingers—the ball of earth will drop out upon the hand unbroken. See full directions and engravings, if needed, in the April *Agriculturist*, 1862 (Vol. 21, p. 117).

Remember the Soldiers.—The Grand Army of the Nation is gathering up its strength for what will be the greatest and, we trust, the final campaign of the war. Daily almost, regiments of soldiers pass our office, moving South. Each of these regiments is made up of many hundreds of patriots, our brothers, sons, and friends, who are objects of interest and solicitude as we follow them in thought to their distant camps and battle fields. A thousand such regiments are in the field, or going there. The U. S. SANITARY COMMISSION is organized to send with them, and to them, as many home comforts as possible—comforts for the sick, the wounded, and the well. Shall we not fill its storehouse, and provide that its treasury shall lack nothing that will aid in this great work? Chicago, Cincinnati, Boston, Philadelphia, and other cities have done nobly. Brooklyn, with its \$400,000 Fair, has eclipsed all others, thus far. March 28th opens the Great Fair of this Metropolis of the Continent, which will doubtless eclipse any thing of the kind that the world has ever seen. The London International Exhibition was but a bauble in comparison, when we consider the object and results. It will be worth a long pilgrimage to see and participate in this Fair. But these Fairs will not accomplish all that is desirable. A million dollars is scarcely more than a single dollar for each soldier.—Last month we invited our readers to unite and raise a fund among the great AGRICULTURIST FAMILY. The responses are beginning to come, in sums of \$1 and upward. A Delaware subscriber, for example, sends \$1 for himself, and \$9 more, from his own pocket, "for nine others who ought to be subscribers to the fund, if not to the paper."—Some write that they have already strained every nerve in home efforts. But can not another dollar

or more be spared, or be collected in small sums, in pennies, and half-dimes, for this good work?—Please read over what was said last month, page 72, and then join in this special subscription.—Let the boys and girls take hold of the work. Let some child in every family begin at once to collect little sums from parents, friends, and neighbors, until at least a dollar is made up.—We are not afraid to guarantee that the money will be well used.—We have great faith in the efforts of children. In London we visited a Sunday School where the expenses of the school and enough to support a day school for the poor, besides two Home Missionaries, and a considerable sum annually for Foreign Missions, is all raised by 130 collectors. Many of these collectors are only eight to twelve years old. Our own country Sunday School collects over \$200 a year in the same way. Every one of our young readers can thus collect a dollar or two for the "AGRICULTURIST SANITARY FUND," and the work will do them good. How many of them will have a place in our list? We shall probably add an extra sheet or two to give the names together when they are mainly in, and so we take none of the present crowded space to acknowledge the sums already received.

For the Sanitary Fund.—Many interesting letters accompany the contributions sent to us, which we would gladly print, and which we shall treasure up as pleasant reminiscences of the enterprise.—Here is one containing a \$13 family contribution from Sunman, Ind.; another from G. C. F., and family, of this city, enclosing the proceeds of silver saved since the beginning of the war, and others of similar character.

New-England Agricultural Society.—A meeting was recently held at Worcester, Mass., by leading Agriculturists of the New-England States, at which a general Agricultural Society of that section was organized, with the following officers: President, Dr. George B. Loring, Salem, Mass.; Vice Presidents, E. Holmes, Winthrop, Me., F. Smythe, Manchester, N. H., Daniel Kimball, Rutland, Vt., Wm. H. Prince, Northampton, Mass., T. S. Gold, West Cornwall, Ct., and Amasa Sprague, Cranston, R. I.; Secretaries, Charles L. Flint, Boston, Mass., and Henry Clark, Poultney, Vt.; Treasurer, Thomas Saunders, Brookfield, Vt. Five Trustees were also elected as executive committee, one for each State. Exhibitions are to be held in the different States in rotation, commencing with Massachusetts. An address was delivered by Prof. S. J. Johnson, of New-Haven, Conn.: Subject, the objects of such an organization, and the means of promoting agricultural progress.

Cattle Breeders' Association.—At the annual meeting of this Society (Worcester, Mass., March 2d), the following officers were elected: President, H. H. Peters, Southboro; Vice Presidents, Thomas Sanders, Brookfield, Vt.; E. N. Jameson, Antrim, N. H., J. J. Webb, Hamden, Conn.; S. L. Goodale, Saco, Me.; E. D. Pearce, East Providence, R. I.; E. H. Hyde, 2d, Stafford, Conn.; Secretary and Treasurer, H. A. Dyer, Hartford, Conn.; Chairman of Committee on Pedigrees: Short Horns, S. W. Buffam, Winchester, N. H.; Devons, H. M. Sessions, S. Wilbraham, Mass.; Aryshires and Herefords, H. H. Peters, Southboro; Jerseys, John Brooks, Princeton. The various committees on Pedigrees were authorized to receive, examine, and on approval to record pedigrees of all animals offered with accompanying fee of fifty cents for each

animal. The executive committee were constituted a committee of appeal on mistake in pedigrees, required to give them due attention, and if necessary, to report to the Society. The next annual meeting will be at Worcester. Everything was spirited and harmonious.

Michaux's Sylvæ.—This is a fine and standard work upon the forest trees of North America. There are five large volumes with numerous colored engravings. The first three are translated from Michaux, and the illustrations are from his original plates: the other two volumes are by Nuttall and include many rare trees from California and Florida. The publication of this magnificent work has been suspended for some years, and it is now very scarce. A new copy has been left for sale at this office. Price \$70.

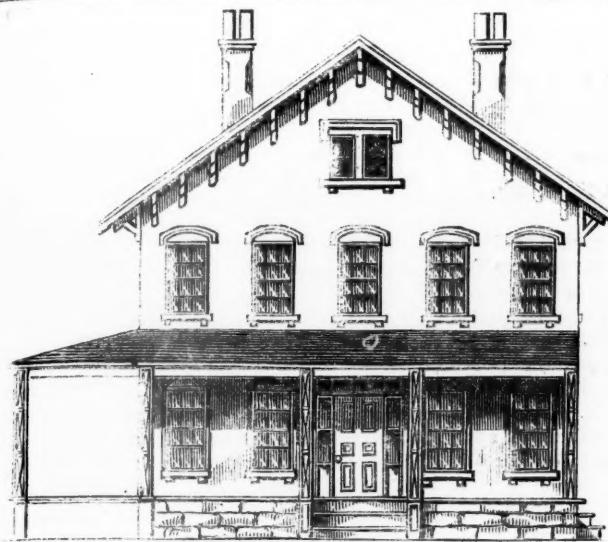
"Vineland Lands" Again.—Last year (in May) we gave the result of some hasty observations, made at that locality, which were not the most favorable. In February of this year we admitted as an advertisement the views of Mr. Robinson, of the Tribune, which were in high praise. We have now before us a circular entitled "Information Concerning Vineland, N. J.", by Alexander Cole, cor. Sixth and Chestnut Streets, Philadelphia, which gives a picture directly opposite that set forth by Mr. Robinson. Mr. Cole claims to speak from experience as a purchaser and settler, and seller-out, at Vineland. We are not sufficiently acquainted with the matter to decide between these conflicting views. It may be well for those interested in the matter, to read all sides. Application to Mr. Cole, with or without a stamp or two to cover expenses, will secure a copy of his circular. Very strong statements on either side of any question require to be taken with allowance.

Bring out the Rags.—They are scarce and high now, the paper makers say, and so they put up their prices terribly—higher than ever before, with a single exception. It costs us more than \$4000 for each number, for the white printing paper alone. The good housekeeper will consult her own interest, and that of publishers also, by hunting up and selling all their paper rags.

Martynia Pickles.—The Martynia described and illustrated on page 113, yields a pod which properly prepared makes a most excellent pickle. Mr. Daniel Willis, Long Neck, Richmond Co., N. Y., communicates to the *Agriculturist* the following particulars of his manner of preparing them: He has cultivated and pickled them for three years past, and is now supplying all the principal Hotels in New-York City with pickles, which we have tried and know to be excellent. The pods are picked while they are yet soft enough to be easily penetrated with the thumb nail, and thrown into brine made strong enough to bear an egg. They are ready for pickling in ten days, or may be kept in the brine longer. If this be done, the brine should be changed about once a month, or often enough to prevent the pickles from softening. When wanted to pickle, they are taken from the brine, washed in cold water, and soaked in vinegar two or three days. Then add about 1 lb. of sugar to 1 gallon of vinegar, with cloves, allspice or other spices to the taste; then them in a bag and let them soak in the vinegar until the strength is extracted: heat the vinegar to boiling and pour upon the Martynias, which should previously have been removed from the vinegar in which they were soaking, and placed in cask or other suitable vessel. After a few days they are ready for use.

Getting the Editor's Picture.—The writer of this (who superintends making up the paper) last month slipped in an item which he thought would satisfy those who had applied for the likeness of the Proprietor. But requests continue to come, both from individuals and Illustrated Journals. One wide-awake Western lady found out a way to obtain it thus: She wrote, "Tell Mr. Judd that from long reading the paper we feel pretty well acquainted with him, morally and intellectually, but we want to see his face, if we can't take him by the hand. We have imagined him 'good-looking,' but after what was said in the March *Agriculturist*, we shall believe him a 'real homely man' if he don't send his photographic carte de visite for our table. I guess he will, and not to ask it without a recompense, I send along two subscribers. Won't a small premium on these meet the expense?"—Such a homely home-thrust as this was not to be parried, and so the lady got two pictures for the two subscribers, an ordinary photograph, and a vignette. She evidently understood human nature, and knew two vulnerable points—the face and the pocket. Perhaps this establishes a precedent which it may be necessary to follow in other similar cases.

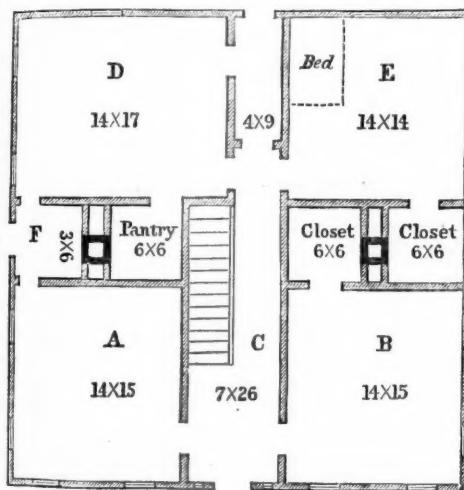
Spring Wheat.—In Taylor Co., Iowa, the varieties of wheat sown are chiefly Scotch Club and Fife, though many regard the Black sea as a more certain crop.



PLAN NO. 1—ELEVATION.

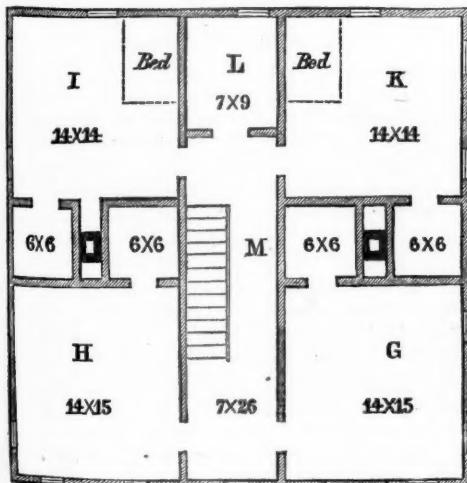
Dwelling Houses—Plans and Suggestions.

An intelligent New-England mechanic, R. W. Woodville, Hampden County, Mass., forwards two good house-plans, and some excellent hints on building. He writes: "I send



PLAN NO. 1—MAIN FLOOR.

REFERENCES.—A, Sitting-room; B, Parlor; C, Front entry and stairway; D, Kitchen; E, Bed-room; F, Entry. you two plans for dwellings, which you may publish should they possess sufficient merit.



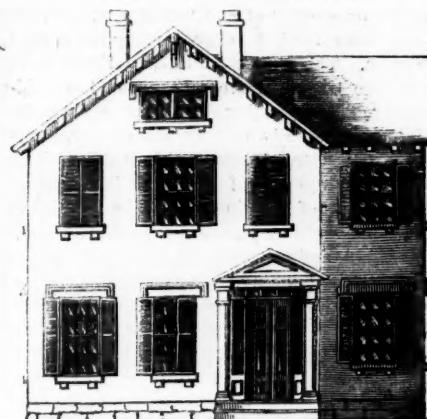
PLAN NO. 1—SECOND FLOOR.

REFERENCES.—G, Guest's bed chamber; H and K, Bed-rooms; I, Nursery; L, Store room, or small bed-room.

I am a practical builder, and have given much study to the class of dwellings coming within the means of the middle and poorer classes. In travelling through thirteen States and the Canadas, I have found the greatest ignorance to prevail in regard to the first principles of house-building. Many think that long, low, narrow houses with many "L's", and continuations, are the most convenient and cheap which can be built. A little thought will change such erroneous views. A cardinal principle in building dwelling houses, is to get

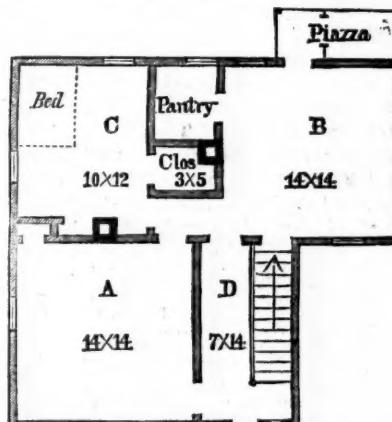
Plan No. 2, is designed for a smaller family, where less cost is necessary, yet it is compact, and conveniently arranged with good closets and cupboards. Please criticise both plans."

[We have sketched two elevations to accord with the plans—introducing a ten-foot verandah in the larger plan, and have modified the plan, in introducing a side door to open upon the verandah, and a door connecting the kitchen with this entry; under some circumstances this might



PLAN NO. 2, ELEVATION.

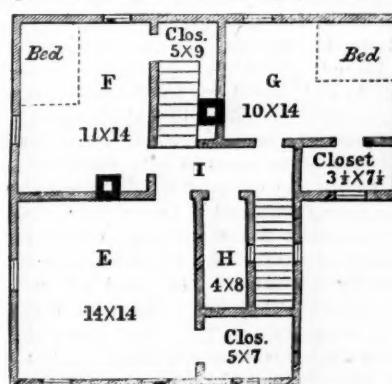
make it worth while to omit the back door altogether; more than two outside doors are undesirable in this latitude. The ornamentation is



PLAN NO. 2, MAIN FLOOR.

REFERENCES.—A, Sitting room; B, Kitchen; C, Bed-room; D, Front entry and stairway.

very substantial and simple; and scarcely more expensive than the usual casing to the eaves.]



PLAN NO. 2, SECOND FLOOR.

REFERENCES.—E, Guests' bed room; F, and G, Bed-rooms; H, Store room.

We have few criticisms to make. The plans are excellent for their purposes, but we think No. 1 would be more generally valued with back stairs and servants' rooms in the attic.

**Experience with Potatoes—Best Sorts—
Large and Small Seed.**

E. Williams, Essex Co., N. J., communicates to the *American Agriculturist* the following observations and experiments upon potatoes: "For years past the Mercer potato has been the standard variety used in this and the adjoining counties. When the Peach Blow came out, it was tried to considerable extent, but soon discarded on account of its late maturity, not ripening soon enough to allow seeding the ground to grain. The Prince Albert and Fluke have also been tried, and are now grown to considerable extent, yielding better crops than the Mercer and usually of very fair quality, sometimes first rate. I grew 'Prince Albert' for three or four years, but abandoned it in 1860, on account of deterioration. The identity of these two varieties is a mooted question with some. If they are really distinct, I think the Fluke the best quality, having tested some grown by my neighbors; Prince Albert, as I grew it, was a little strong. Believing 'like will produce like,' I have long been convinced of the propriety of using large seed. But the diversity of opinion, and some published views in favor of small seed, induced me in 1860 to experiment with different sized seed, to get at the facts. The following is the result with Mercers:

NO. OF ROW.	DESCRIPTION OF SEED.	YIELD PER ROW.		
		QTS. PRIMES.	QTS. CULLS.	TOTAL.
1st—Small—cut in 2 to 4 pieces.....	16	19	35	
2d—Small—whole.....	16	23	39	
3d—Large—cut to 2 or 3 eyes.....	19	13	32	
4th—Large—cut in two—small ends.....	13	17	30	
5th—Large—cut in two—large ends.....	16	18	34	

"It will be noticed that the best yield was from No. 3, the largest from No. 2, which had an excess of small potatoes. The small seed was about the size of pullet's eggs. For the last three years I have cut my seed to one or two eyes.

"In 1862 I obtained of Rev. C. E. Goodrich, of Utica, N. Y., four of his seedlings, and annex the yield, compared with other sorts, two rows of each being planted in the same field:

VARIETY.	Qts. Primes.	Qts. Cullis.	Total Yield.
Prince Albert.....	50	9	59
Jersey Mercers.....	54	7	61
Nova Scotia Mercers.....	87	23	109
Peach Blow.....	54	22	76
Garnet Chili (Goodrich Seedling).....	74	6	80
Coppermine " " 120	13	133	
Pink-eyed Rusty Coat " " 112	32	144	
Cuzco " " 144	16	160	

"The ground on which these grew I measured accurately, to ascertain the rate per acre they yielded. The result is as follows: Prince Albert, 88 bu. 6 qts.; Jersey Mercers, 91 bu. 18 qts.; Nova Scotia Mercers, 163 bu. 20 qts.; Peach Blow, 144 bu. 3 qts.; Garnet Chili, 120 bu. 3 qts.; Coppermine, 199 bu. 21 qts.; Pink-eyed Rusty Coat, 216 bu. 6 qts.; Cuzco, 240 bu. 7 qts. So well pleased was I with the Goodrich potatoes that I planted but little else last season, and from basket measurement of a few rows while digging, to compare with the yield of 1862, I think they exceeded it, although planted on the same ground and in an unfavorable season. The soil was only medium. One of my neighbors thinks that the Cuzco will give 400 to 500 bushels per acre, on good soil, with good culture. They are really quite hardy, though not entirely exempt from rot, as claimed by some. The Rusty Coat is probably the least liable of any, and Coppermine the most. As to the quality, people's tastes differ as widely as on fruits, some preferring one, some another. They are all of fair quality, to say the least. Rusty Coat is a little rank in the fall, but good in mid-winter and spring. Cuzco will suit people who are willing to take a second rate

potato with bountiful yield in preference to a first rate one and little yield. I consider them a valuable acquisition, and Mr. Goodrich is, I think, entitled to something more than the thanks of the agricultural community for his efforts in this direction."

Diphtheria in Hens at the South.

F. H. Squire, M. D., Surgeon of 89th N. Y. Volunteers, writes to the *Agriculturist*, from Folly Island, S. C., describing a disease of poultry resembling diphtheria, which attacked several of his hens, some of them fatally. The affected fowl showed great languor, frequently stretched her head upward and forward, at the same time opening her mouth widely. After these movements the head would settle back again towards the body, and she would apparently fall asleep for a little while. She died in two days. He says: "I examined the mouth and throat very carefully. On the inside of the right cheek, especially at the corner of the mouth, was quite a patch of the genuine, false membrane of diphtheria, which I cleaved off with a probe. On opening the mouth widely and looking into the throat, I saw that the opening of the windpipe was filled up with the same kind of yellowish substance. I then removed the skin from the neck, and with a pair of scissors, divided the windpipe about two inches below the throat, where it appeared to be perfectly healthy. I now worked toward the throat, cutting off piece after piece of the windpipe, until I obtained from this direction a view of the false membrane which was blocking up the air passage at the chink of the glottis. After I had in this manner thoroughly exposed the situation of the disease, I took a probe and gently separated the false from the true membrane, and then removed it, as one would remove a cork from the mouth of a small vial. The specimen thus removed, looks like a section, half an inch long, of a tube of whit-leather. It is about a third of an inch in its external diameter, and the opening through it is very small, only large enough to admit a little filament of broom corn, by means of one of which it is now suspended in a small vial of diluted alcohol.—If the disease is seen early, as soon as the hen begins to gape and cough, I imagine the throat would only have a kind of pearly or milky appearance; and at this stage I would simply apply in the throat a solution of nitrate of silver, two grains to the ounce of water. When the disease is far advanced, and the false membrane is thick, I would try to remove it with a probe or a pair of small forceps."

Abortion in Cows.

The frequent occurrence of abortion in cows, amounting in some localities almost to an epidemic, calls for investigation to discover if possible the causes which now appear to be very little understood. In Herkimer Co., N. Y., great complaint has been made of the prevalence of this disorder, hundreds of calves having been lost in this manner last year. A committee was appointed by the Little Falls Club, to visit the farms where many cases had occurred, and to collect all the facts apparently bearing on the disease. No theory previously entertained respecting the difficulty, seems to have been sustained by their observations. They report cases occurring under under many different circumstances, some where the cause might

be attributed to foul stables, others to ergot upon their feed, but others were found where these supposed predisposing circumstances were absent. It appears probable that there is danger in allowing an affected cow to remain with the herd, as other cases are pretty sure to follow apparently from sympathy. Whatever interferes with the general good health of the animal would seem to expose her to the disease. Beyond these general facts, little appears to be known, and the subject is worthy of extended observation and careful study.

To Keep Flies from Working Cattle.

D. H. Sherwood, Fairfield Co., Conn., communicates to the *American Agriculturist* his plan for repelling flies from cattle when at work. Take a piece of scantling 3x4 inches and a few inches longer than the yoke. Through this bore four holes to correspond with the bow holes in the yoke. Have bows long enough to extend five inches above the yoke. After the oxen are yoked, put this piece on the top of the yoke, letting the bows come through the holes. Bore several small holes in the sides of the above piece, and fasten in brush long enough to reach the oxen's hips. The brush should be of some tough wood with the leaves on. When it is worn out put in more. Some use blankets for their cattle while working, but it makes them unnecessarily warm, and costs something at present prices. The motion of the oxen while walking will keep the brush waving about enough to keep the flies away.

Treatment of Bloated Sheep.

L. Davis, Lynn Co., Iowa, writes: "In nearly all cases where I have seen an opening made in the side of the sheep, as recommended by a writer in the January *Agriculturist*, page 7, it has proved fatal to the sheep. The best remedy I know of, and which has often proved successful, is to have a hose-pipe of leather or India rubber, of small diameter, at one end of which is placed a metal ring, to keep it open. This is let down to the stomach through the mouth. To prevent the sheep biting it, and so closing it, let the hose run through a piece of wood, and insert this in the sheep's mouth."

New Food for Sheep.

At a recent meeting of the Maine Board of Agriculture, Dr. Weston called attention to the subject of feeding sheep on fish. He stated that sheep, swine, and fowls, greedily eat fish pomace or the residuum of herrings after the oil is pressed out, and that smoked alewives and frost-fish are relished by cattle. On the seaboard where large quantities of fish pomace are used for manure, flocks of turkeys feed upon it and get fat, but a fishy taste is imparted to their flesh. Undoubtedly this food will abundantly furnish the elements for meat; careful and observing farmers who have fed it, assert that it is of equal value with good hay, ton for ton. The objection to this treatment will probably be found in the impaired flavor of the meat so made. It is well known that this varies even with the character of the pasture in which animals are fattened, and so great a change as that here proposed may have a marked and not very improving effect. Perhaps, however, a finishing off feeding of two or three weeks be-

fore slaughtering may produce the usual flavor of the flesh. Experiment alone can decide.

Setting Fence Posts.

Among the special annoyances at this season is the perpetual heaving of fence posts by the frost. When this occurs badly, the expense and trouble of fencing is much increased. A correspondent of the *Agriculturist*, A. J. Taylor, of Bradford Co., Pa., states his mode of setting posts in soil which heaves badly. He writes: "I have had experience in fence-making, have tried different ways, and I think the difficulty alluded to can be entirely obviated thus: Dig a small hole 10 or 12 inches deep, drive down a crow-bar to the depth of about 1½ feet further, insert the post [sharpened doubtless] and drive it thoroughly with a beetle, chinking up in the usual way around the post with stones [so that no soil comes against the post at the surface]. The post is set deeply in the ground, below the action of the frost, and the stones prevent the earth from freezing to it and drawing it out. Though it has been about eighteen years since some of my posts were first set, they have not been drawn out by the frost, and have only to be straightened up and re-chinked."

Cultivation of Barley.

The barley crop occupies a place in the regular course of cultivation in England, which it has never attained in this country. In a comparatively few localities here it has been grown for many years, but some have abandoned it for various reasons, and over large districts there are farmers who have never tried it, or perhaps even seen it growing. This may be, in part owing to the fact that for its best growth it requires a soil specially adapted to it, but in part, we judge, because it has not been "the custom" of the neighborhood. Some think that the short hot summers of this country are unfavorable for this grain, but this objection would apply equally to oats and grass. It is, like wheat, liable to attack from the midge, which has also to some extent prevented its continued cultivation.

The Transactions of the N. Y. State Agricultural Society for 1861, give a report of a crop raised by Daniel Dryer, Ontario Co., N. Y., which shows that under favorable circumstances it may be profitable. 4 1/5th acres of corn stubble were enriched with 20 loads of stable manure spread on the clayeyest part of the field. The whole was plowed eight inches deep and sowed the last week in April with ten bushels of 6-rowed (commonly called 4-rowed) barley. The land was harrowed both ways and then rolled. About 500 lbs. of plaster were sowed before all was up. The crop was harvested the first week in August, and yielded 198 bushels, which was sold at 50 cents per bushel. At this low figure the profit on the crop was \$62. The soil of the field was a sandy loam, a portion of it clayey.

Barley succeeds best on a light sandy or gravelly loam; a compact clayey soil is better devoted to wheat. It does not thrive on sod ground, but follows corn well. Those who consider oats too exhausting for lands of this description, might find barley a good substitute. The 6-rowed variety is esteemed the hardiest, though the 2-rowed is generally preferred in this country, because of its superior fullness and freedom from smut. A variety recently introduced called Nepaul Barley, described and illustrated in the *American Agriculturist*, Vol. XX,

page 261, is highly recommended by those who have tried it. It yields well and the grain is very heavy; one of our subscribers reports having raised some weighing 71 lbs. to the bushel. It should be sown as early as the ground can be properly prepared. From 1½ to 2½ bushels per acre is the usual quantity of seed, according to the character of the soil, the most being used on the best land. Smut may be prevented by soaking the seed in a solution of blue vitriol and water, the same as for wheat. After soaking, dry off the seed with slaked lime or plaster and sow immediately.

Peas as a Field Crop, Cultivation, etc.

It is a reproach upon American Farmers that (excepting clover) we have so neglected the *Leguminous* plants, as field crops. True, we raise white beans where we think nothing else will grow—when we are belated about getting in spring grain, or where crops fail in spots; but peas, lupins, lentiles, vetches, and to these may be added, crimson clover, lucerne, sanfoin, melilotus, etc.—are almost unknown to American agriculturists. This ought not so to be. Of them all, *peas* offer the most attractions perhaps. They will thrive upon any good corn or wheat soil, delighting most in clayey loams, but doing well on calcareous soils, if used for feeding.

This is an excellent crop to put upon a fresh turned sod, free from bad weeds. If the sod be heavy it need not be manured; otherwise, apply a reasonable dressing of manure. Sow the peas as early as the ground can be worked, after pouring scalding water upon them, in quantities not exceeding 6 quarts of seed together, little more than covering them with water, letting them soak 8 to 12 hours, and drying them with plaster. This scalding operation kills the "pea bug," a weevil which lays its eggs just after the blossoms have fallen. The grubs penetrate the pods and locate each in an embryo pea. Here they mature and remain till sown with the peas, when they appear and make their attacks at the proper time. Though unnoticeable at first (and not injuring green peas), they detract much from the value of the crop. Peas for seed should be sowed late—after June 12th—and will thus escape injury almost, if not wholly.

The common Yellow Field Pea is usually cultivated, and the Marrowfats are also recommended. Those which make a very rank growth of straw are undesirable. Sow 2 to 3 bushels to the acre, broadcast, and plow the seed under about 3 inches deep. After plowing it is well to roll the land, but if the ground is likely to bake, it may be "dragged" with a harrow turned over. The haulm of the peas is so branching and tangled, and the roots are drawn from the soil so easily that, when the crop is mature, a revolving hay rake will easily throw it into windrows. It is best to leave till dry in heaps, which may be protected from rain by hay caps. The crop is fed to hogs or cattle without curing, when the peas are nearly ripe; ripe and threshed, the grain is excellent fattening feed for cattle, horses, sheep, or hogs, and the straw, well cured, is similar to clover in feeding properties and is a favorite fodder for sheep.

Peas are off the ground early enough to prepare the land for wheat, which follows very well, and this will be found a very excellent crop to introduce into a rotation, either before or after wheat. Thin sowed peas lodge badly, but when sowed thick they stand by holding on upon one another by their tendrils. The use of lime and gypsum, though advantageous to

the crop, make the peas hard when boiled,—the same is partly true of peas raised on lime soils.

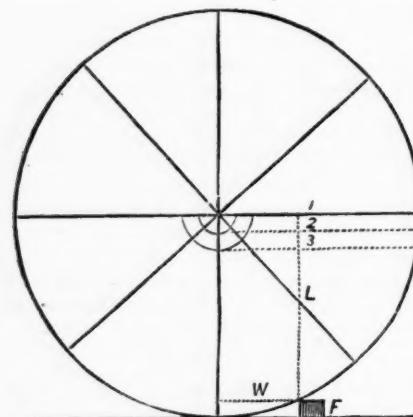
Concentrated Manures—Tests of Value.

There are now many kinds of concentrated fertilizers in market, but the energies of speculators are turned into other channels, and the systematic frauds upon farmers which were practised a few years since are now less annoying. The demand for such manures, however, is great, and the supply small. Farmers are thrown upon their own resources—and to great advantage to themselves, doubtless.

The test of value almost universally received as reliable, is the *test in the soil and upon the crops*. This is almost uniformly fallacious when applied to mixed commercial fertilizers, because with the majority of these manures there is mingled a little guano, or ammonia in some form, which always produces a quick effect. Then too, the circumstances of soils differ greatly, and a few dollars' worth on one soil will produce a great effect, while on soils in general, no corresponding benefit is observed. The farmer should know something of what his soil needs before he purchases. He feeds his animals roots (or a few farmers do), corn-fodder, hay, corn, ship-stuff, bran, oats, corn meal. Some of this is fed to the cows, some to the hogs, some to the poultry, and so on. He would not be a wise man who would mix all kinds of feed together and give it out indiscriminately to hens and horses, sheep and swine. The man would be equally foolish who would buy feed ready ground and mixed, without knowing about how much of each kind of grain the mixture contained. We should all consider a farmer insane who would buy for hog or chicken feed, a mixture of corn-fodder, hay, saw-dust, etc., mingled in uncertain quantity, with grain, ground and unground, because somebody claimed to have fed it to old pulled-down cattle and that they did well on it. Yet this case is exactly parallel with that of the man who, on the strength of some published recommendatory certificates, buys poudrette, superphosphate, tafau, and a score of other fertilizers, without any idea of the needs of his land or his crops. No one doubts that there is good in both these mixtures—the feed and the manure. The chickens might thrive on the mixed feed by picking out a good deal of grain and grass seed, and the crops might flourish on the mixed manure, but no one can argue for the economy of the practice.

There are certain kinds of concentrated manures which a farmer can afford to buy, in order to increase his stock of fertilizers not alone by what they add to the soil, but by the use he makes of them. Hair, woolen rags, castor pomace, glue waste, and such things, composted with sods, muck, or the like, convert the mass into an excellent, fine, well-rotted manure. Knowing what he wants, the farmer can buy that which he can best get to answer his purpose. Lime, gypsum, bones, unleached ashes, leached ashes, each produce certain effects more or less definite, which may be calculated upon with considerable certainty.

The *test of manures, in the soil and upon the crop* is reliable when we apply simple manures or those of known and uniform composition, upon very similar soils, and under the same or very similar circumstances of weather, seed, preparation of soil, etc. The *chemical test* is not properly a test of value, but simply a test of composition. The chemist tells what a manure contains, and the farmer must judge whether he can or can not buy the ingredients cheaper in some other form.



Wagon and Carriage Wheels—Large or Small Axles.

The questions on this subject in recent numbers of the *American Agriculturist*, are exciting considerable attention, but no more than is deserved, as will be seen from some of the facts presented below. Several communications from practical men have been received and more are invited. We have space the present month for only the following, from Henry Harper, Green Lake Co., Wis.—: "The query of David Williams, in January *Agriculturist*, page 4, as to which has the most power for draught, a large or small axle, has been elucidated in the 4th and 5th Vols. of the Coach Makers' Magazine. A wagon wheel is nothing more or less than a lever power. The above question, then, is simply this: which of the two axles has the most leverage? The above diagram shows the operation of the lever power in a wheel: *L* is the lever; *F* the fulcrum that the wheel makes of the obstacle over which it is to be raised; *W*, the weight to be lifted; 1, 2, and 3 are the draught lines to the different sized axles, the draught always being from the bottom of the axle. To determine the power which the different sized axles have to lift the wheel over the obstacle, compare the length of the lever line *L*, from where it crosses the draught line, to the fulcrum *F*, with the *W* or weight line. In this case the lever line, *L*, is twice as long from the draught line 2, as the line *W*; therefore, one lb. draught on the line 2 will balance two lbs. over the obstacle. If the lines were of equal length, it would take a draught power equal to the weight to lift it over the obstacle. Any one can see how the different sized axles shorten or extend the lever line, *L*, and in the same proportion the power is evidently increased or diminished.

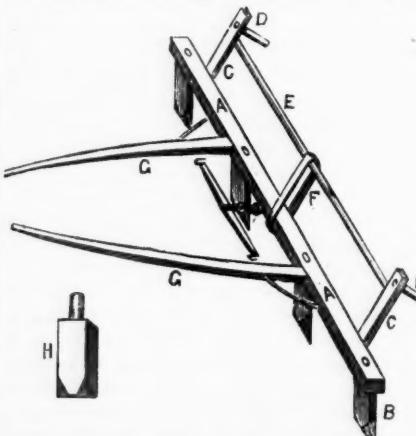
"It is a well established fact, that one pound draught will earn over \$100 while a good, substantial wagon is being worn out. Then it is plain that, if one lb. of draught be lost by wrong construction, in wearing the wagon out there will be expended \$100 worth of work without any compensation. Every body knows there is more or less difference in the draught of wagons. What the difference will average, no one can tell precisely, but it will not appear extravagant to say there is an average of five lbs. to 1000 lbs. load lost by the average construction of wagons. This would make an average loss of \$500 on every wagon made. Suppose every wagon-maker averages the production of three wagons in one year, he then entails \$1,500 loss on the community. Wagon and carriage makers have no more right to make a difference in the results of their wagons and carriages as to draught, under like circumstances, than Mr.

Fairbanks has in his scales. Both articles depend on lever power; the power of the one is as susceptible of calculation, mathematically, as the other. If the farmer observes his own interest and acts intelligently by not patronizing mechanics who are content to remain uninformed about mechanism, he will remedy a great evil."

A Convenient Home-made Corn Marker.

Roswell R. Moss, Chemung Co., N. Y., contributes to the *American Agriculturist* the annexed illustration and description of a corn marker used by himself and neighbors: "It consists of a bed piece, *A*, of 3x4 oak joist, 11 feet long, in which teeth, *B*, are set 3 ft. 4 in. apart. The teeth are of oak, 2x4 and 12 in. long, exclusive of the tenons, which are 3 in. long and fitted to 2 in. auger holes in the bed piece. Uprights, *C*, of oak 2x2 in. and 2 ft. long in the clear, are set in the bed piece, 6 in. inside the end teeth, at an angle of 45°. Handles, *D*, are fixed in these 6 inches from the upper end. A cross-pole, *E*, connects the uprights in the middle, and is stiffened by a leather strip, *F*. Shafts, *G*, 8 ft. 9 in. long, are set in the bed pieces at an angle with the uprights, 4 ft. apart, at such an inclination toward each other that they will be from 15 to 18 in. apart at the other ends. They are braced by $\frac{1}{2}$ in. iron rods, as is shown in the drawing. A hook is fixed in the middle of the bed piece, to fasten a whiffletree to. The cross-pole and shafts can be made of white oak or ash saplings. The teeth being chamfered to an angle in front, and the manner in which they are drawn over the ground, prevent the soil falling back into the mark. One of the teeth is shown at *H*. It can be made by any farmer possessing ordinary ingenuity, and at a trifling expense. It can be attached to any harness by using straps to hold the thills up.

It is used with a single horse, and a boy to ride, and a man or *smart boy* to guide. Get started in a straight line by a fence or flag, the guide having hold of the handle toward the fence. In turning, take hold of the cross-pole by the middle, lift the marker clear from the ground, have the horse come round as in cultivating, back to the edge of the field. Drop the



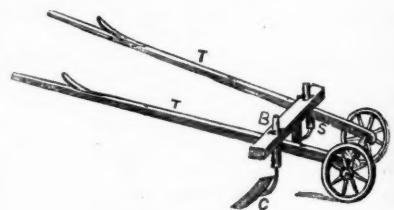
CORN MARKER.

marker so that the end tooth will fall in the outside mark, take hold of the handle over that tooth and start again, keeping the eye ahead to remedy any deviations caused by stones or lumps. A man and boy and a smart horse can mark twelve acres both ways in a day."

He who is caught in a passion submits himself to be examined through a microscope.

How to Raise Carrots.

H. A. Cook, Columbia Co., N. Y., communicates to the *American Agriculturist* the following directions, which contain several good labor saving suggestions: "Moisten the seed and keep it warm four or five days, occasionally stirring it, until it is just ready to sprout, or quite sprouted. Just before sowing, usually about the middle of May, [no matter about the moon,] spread it out to dry a little, that it may be easily sifted through the fingers. Make the plot very rich and plow deep. Carrots will run down as deep as the soil will admit. Rake the plot clean preparatory to making the drills. Make a drag or marker with thills and upon them straps like those of a boot, to draw by, and four or five teeth 20 inches apart, a little sharpened and inclining backwards slightly from the perpendicular. Draw a line for a guide and go through with a tooth of the marker on it; in returning let



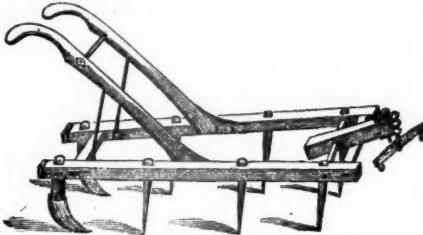
CARROT WEEDER.

the outside tooth run in the drill mark last made. Moisten carrot seed can not be properly sowed with an ordinary seed drill. Hang a small cup on the fore finger of the left hand; hold a common dinner horn bottom up with the three lower fingers of the same hand. With the thumb and finger of the right hand sift the seed through the horn into the drill, no matter how much the wind blows. The horn being conical, if the seeds escape from the thumb and finger somewhat irregularly, they will bound along down to the vertex and come out very evenly. The seed should be perfectly clean. Let a boy follow and cover the seed with a hand rake, and another spat with a hoe, or draw a hand roller. If the carrots are not up in one week, the seed is not good. This point, however, may be known before sowing, by fully sprouting a small portion of them. The great trouble in sowing dry seed is, that the weeds get the start of the carrots and make double the labor. Carrots can be cultivated by one person with the implement illustrated above, as fast as three can work with hoes. Make the cross-beam, *B*, of 3x4 in. joist, 3 feet long. Let the thills, *T*, *T*, (which may be old rake handles) pass through it, slanting downward, and converging to about two feet apart at the lower end, where they are attached to the axles of the two wheels, which should be about one foot in diameter and made quite heavy to keep the implement steady when working. The uprights, *S*, are of wood, two inches in diameter, each strengthened with an iron ring or ferrule at the lower end, to receive the weed cutters. These cutters, *C*, may be made of old scythe blades. They should be 12 inches long, and have a neck like the shank of a hoe blade to enter the standards, *S*, where they are fastened by iron pins. The cutters should be placed so that the ends next the rows slant forward a little, with the edge slightly inclined downward. The neck being fastened on the under side of the blade, will help to prevent clogging. The knives should be kept sharp. This implement can be best used by taking hold

of the hills and walking backward. Some weeding close to the rows and thinning with the hoe and by hand will be necessary. The plants should be left about three inches apart in the row. To harvest the crop expeditiously, take an iron beamed plow and run it beam deep close beside the row. Sharpen a hoe and let a boy use it to cut off the tops, and at the same time draw them into the furrow. Run the plow through again covering the tops, and turn the row of roots bottom up. [Carrot tops are good feed for cattle, and will pay for saving for this purpose.—Ed.] With a potato hook rake out the carrots; cut off the tops from another row, and so proceed through the field. The carrots should be left in small piles three or four days before storing, or they are very liable to rot. In the above manner, with the aid of a boy fourteen years old, I have harvested 75 bushels of carrots in 7 hours. By thus plowing them out, the ground is left in very nice condition for the succeeding crop."

Corn Covering Implement.

The implement shown by the accompanying engraving has been for many years in use in parts of Pennsylvania, to the almost entire disuse of the hand hoe for covering corn. It is represented by our correspondent, J. A. Alexander, as easily made, and is thus described. "It is simply a small harrow; two pieces of 3x4 scantling, about 5 feet in length are joined by two cross bars; the width in front will be about 15 inches, and behind 13 inches. Handles are attached as they are to a cultivator harrow. For teeth, 6 common harrow pins, and 2



CORN COVERER.

cultivator teeth are used. These are put through the beams at equal distances—the two broad teeth being put behind—one in each beam, and within 4 inches of the ends. The clevis upon a piece of scantling about 4 inches square and 18 inches long, is attached by an inch and a quarter pin passing through both beams a few inches behind the front cross-bar so as to rest across it. It is drawn by a single horse. The corn is covered with the fine soil gathered from the edges of the furrow. If the ground is very mellow, there may be danger of covering too deep, and some of the teeth should be knocked back, or taken out. The corn may be dropped either in hills or drills, for it covers all alike."

G. W. Baldoek, Clark Co., Ind., describes a much simpler implement for the same purpose, which he says is generally used in his neighborhood. It is simply a stone, somewhat in the shape of the letter V. It should be about 18 or 20 inches at the broad end, tapering gradually to a point, with a hole drilled near the point for a clevis or hook to be fastened, and also a hole in the broad end to receive a rope, by which to hold it steady, and to pull it around at the ends of the rows. Cross off the ground both ways, the first way shallow, the other way quite deep but not unreasonably so. Drop the corn and cover the way the ground was first

marked off, by having a horse attached to the stone and driven after the dropper. This levels down the furrows and thoroughly pulverizes the clods; it smoothes down the surface ten or fifteen inches about the hills and enables the plowman in cultivating to get close to the corn without covering it with clods. The corn is covered at uniform depth and comes up at the same time.

Onion Culture.

The cultivation of onions has of late been profitable in all places where there was ready access to market. In a crop so variable as this, the experience of successful growers is valuable. We have published in a 20-cent Pamphlet the methods followed by 17 successful practical growers, but as Mr. Theodore Barker, Rockland Co., N. Y., has some details of practice different from anything we have seen, we add to the literature of the subject by publishing his communication: "I grew last year (unfavorable as the season was in my section) from a plot of ground thirty by forty feet, seventeen bushels of very fine onions. The soil was rather light, and I applied broadcast about one load of manure, consisting of well decomposed barn-yard manure about two-thirds, and one-third swamp muck. This should be done as soon as the weather will admit in the spring—still better in the autumn—and plowed under immediately to the depth of about ten inches; then about the middle, or towards the latter part of April, give it another thorough plowing, and as soon as the surface becomes dry, harrow well with a light, close-tooth harrow; then I top-dress lightly with well decomposed manure from the barn yard—or still better from the privy or pig sty. I now proceed to drilling with a marker of my own manufacture, made like a hay rake, with five teeth fifteen inches apart, which makes four drills at a time, one tooth running in the outside drill as a guide. Then, with one foot on each side of the drill, drop and cover the seeds lightly, packing the drills with a garden roller, (I consider this very important). This done, I draw a bayonet hoe through—going before it—to loosen the ground packed while planting; this prevents a crust forming on the surface. When the onions are up so that they can be seen, I again draw the bayonet hoe through them, and continue to do so occasionally until they are up about five inches; I then thin them to about three inches—many would object to this as being too close, but I have found that by crowding each other some, they bottom better, and the consequence is, they form a double row, thus making a larger yield. With a small garden plow I pass the land-side to them first, and immediately reversing I throw a furrow toward them; this is done in order to protect from drought many young fibrous roots which lay near the surface. This I consider the great secret in onion culture. This, however, should not be practised too late, but on the contrary, when the tops are up about twelve or fifteen inches, the dirt should be taken from them, as the roots have become strong by this time and penetrated further into the earth and are better able to stand drought and the onions will bottom very rapidly. I am well aware that it has been argued that in order to produce good onions, the ground must be kept perfectly level and hard; on the contrary, I find it needs to be kept loose, and a part of the time ridged. I have seen my own onions remaining high colored and growing through a dry time, while those of my neighbors, who kept their ground flat, were dy-

ing. Another absurdity is rolling barrels over the tops, in order to make the onions bottom. This I never had occasion to do, as I find that the top becomes reduced and falls off itself when the onions bottom. My mode of gathering is to pull them when the tops are nearly dry, placing them thinly together upon the ground, (in this state they remain three or four days,) then if dry, I top them with a knife and put them upon the barn floor. Care must be taken not to have them very thick, or they will sprout. I allow them to remain here four or five weeks, when they are put in bins, in a cool, dry place." As long as the present large demand continues, onion culture on suitable soils will pay well.



About Leeks.

Those who do not like onions will not cultivate leeks, as they have a flavor resembling that of the onion, though quite peculiar. Leeks are so highly prized by the Welsh that they are as much a national vegetable for them as the potato is to the Irish. The leek differs from the onion in having broad flat leaves, and in not swelling out at the bottom. The eatable portion consists of the lower part of the leaves forming a neck which is blanched by earthing up to exclude the light. The engraving shows the appearance of the leek. Sow seed in early spring in a light rich soil. It may be sown thinly in drills, 15 inches apart, where the plants are to stand; in this case they are thinned out to six inches in the rows, and are gradually earthed up at the summer hoeings. Some cultivators sow the seed broadcast or in drills, and when the plants are four to six inches high, they are transplanted to trenches about six inches deep, and gradually earthed up as they grow. We have found these methods equally successful. It is said that occasionally shortening the leaves will increase the size of the leek. We have never tried it. One ounce of seed will produce about two thousand plants. The leek is quite hardy and in most localities may be left out over winter, and will come out in spring "as green as a leek." Leeks are used in soups and stews. When cut up in soups and thoroughly cooked, they impart besides their peculiar flavor, a mucilaginous quality much liked by many.

Flax Culture—Profits.

Flax grows well wherever oats will—so far as climate is concerned. It requires good corn ground, neither too stiff nor too light. It will not bear fresh manure in any quantity, yet needs a fertile soil. Good sward, plowed in the fall and sowed in the spring, or corn stubble ground is adapted to it. When raised for seed, grass or clover seed may be sown at the same time—that is, after or with the flax. A common rule for the quantity of seed to sow is, 3 pecks per acre when the crop is raised for seed, and 2 bushels when raised for fibre. The object with American farmers has hitherto been chiefly to obtain the greatest quantity of seed, but now the fibre is in demand at very remunerative prices, at least in some parts of the country, and the demand is rapidly widening. It is not customary for us to spend the home labor upon the straw usual in Europe, but it is got in marketable condition at the least possible expense of labor.

Mr. J. E. Cunningham, of Dutchess Co., N. Y., who is a successful cultivator, gives us briefly an account of his last year's crop, a fair average one, as follows: Plowed in last year's stubble (the corn was well manured), sowed broadcast 5 pecks good North River seed, harrowed it in lightly and rolled the ground. The sowing was done at the time he sowed oats, about the first of May. When the top bolls turned brown, the crop was pulled and laid as in swaths from a cradle; after two or three days it was bound with rye straw in bundles about 6 to 8 inches in diameter at the bands, and housed. As soon convenient it was threshed, one man opening the bundles, another spreading the straw out by large handfuls in a fan-shaped form, and applying the heads to the cylinder of a threshing machine, the "concave" being raised so that the teeth scarcely touched. [The straw is all retained in the hands in this process.] Another man raps out any seed which may still be lodged in the straw, and re-bundles it. After mowing, in the month of September, the straw was spread out upon the meadow, just thick enough to cover the ground. Here it lay about one month, being turned at the end of two weeks, by which time it was rotted enough. [The length of time depends upon the weather.] At this time it was raked and bound as at first, but whether stacked or housed, Mr. C. does not mention. His crop was $78\frac{1}{2}$ bushels of seed, which sold at \$3.00 per bushel, and nearly 5 tons of straw, which sold at \$40 per ton, making in all \$435 $\frac{1}{2}$.

Amount of Butter and Cheese in Milk.

According to the reports of several of the associated cheese dairies, an average of 10.14 pounds of milk is required to yield a pound of cheese. One pound of butter requires on an average about 15 quarts of milk. This would give from the same amount of milk about 3 lbs. of cheese to 1 of butter. A dairyman in Western New-York after repeated trials of making cheese and butter from the same quantity and quality of milk, has found the above proportion to be pretty uniformly maintained; occasionally the cheese slightly exceeds the given rate. At present prices cheese would give the best profit.

HARD TIMES.—A farmer who lives on a certain hill, called "Hard Scrabble," in Central N. Y., says that last summer, owing to the drought and poor land together, the grass was so short they had to lather it before they could mow it!

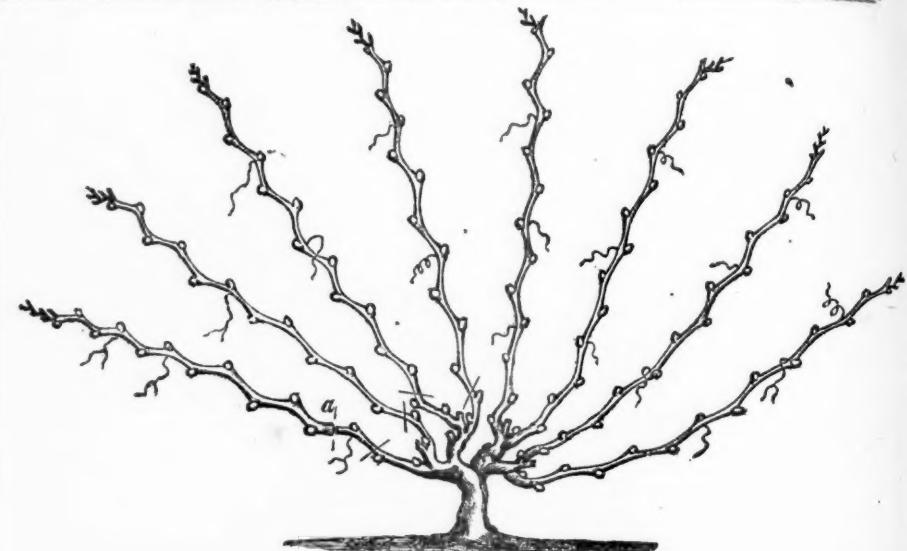


Fig. 4—VINE GROWN WITHOUT TRELLIS.

Grape Vines in the Garden.

In the *Agriculturist* for November of last year, a detailed account was given of two methods of training the vine. As these may appear too complicated, and require too much outlay for trellis, (although they are really very simple and

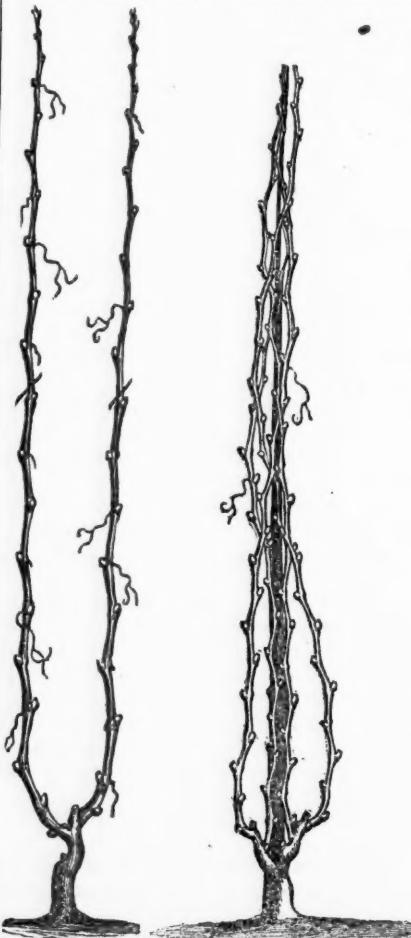


Fig. 1—2nd YEAR.

Fig. 2—3rd YEAR.

will be found so in practice,) we give some other plans which are suited to narrow limits and which will give good results, although less fruit will be produced from each vine, as they will be dwarfed. Directions for setting the vine are given on page 111; it is cut back to 18 inches, and one bud allowed to grow the first year. In

autumn this single cane, thus produced, is cut back leaving three buds of new growth, and the next year two buds are allowed to grow. If the vine is strong one it may be allowed to bear a few bunches of fruit; if weak, the blossom buds should be pinched off to allow the whole strength to go to make wood. The vine in autumn will appear like fig. 1. Of course the canes each year are supported by tying to stakes. The following autumn the canes are cut off above the lower two buds, if the vine is to be protected; or if left exposed, we prune above the third bud and cut back to the second one early in spring. The next year's growth is represented in fig. 2, and a vine of this size will bear from 12 to 20 bunches of fruit, and will need only a single stake for support. In pruning this vine in autumn, cut away the uppermost two canes entirely, and shorten the others to two buds each if protected, or to three if not, as before. The vine when pruned will appear as in fig. 3, and this manner of pruning may be repeated each year, if the space is confined; or if there is room for a trellis, instead of removing two of the canes entirely, all four may be cut back to two buds, and these will produce eight canes as in fig. 4, which may be disposed on a trellis and will give from 30 to 40 bunches of fruit. This vine has four short spurs producing two canes each and may be pruned according to circumstances. If double the number of canes can be grown without crowding, then prune each cane to two buds, and next year sixteen canes will grow. If, however, eight canes are all that are needed, then cut away the upper cane on each spur and shorten each of the others to two buds. This is essentially the same plan of training as shown in the upper figure on page 340 of last November, except that there are fewer spurs, and these are not distributed on long arms as there represented. There are often situations and gardens where the best place for training the vine is at some distance from the most suitable spot for planting it. In such cases, the arm or arms upon which the canes are to be borne may be started ten or more feet from the ground, and all shoots kept off below the arm. The manner of laying down arms is shown in the figure



Fig. 3—3rd YEAR PRUNED.

published last November and quoted above, only in the present case the buds for the arms are taken from near the top of a strong cane, instead of within a foot of the ground. A single arm may be made, and its spurs pruned in the same way as the double one there mentioned. Mr. Wm. Gerhault of Vanderburgh Co., Ind., grows his grapes in vineyard culture by a method of pruning similar to that shown in fig. 4, and without the use of a trellis. He plants his vines 4x4, and during the early growth they are treated as described for figs. 1 and 2, except that the spurs are about two feet from the ground. When the vines get as large as in fig. 4, the canes are kept pinched back above the fruit. This is an old method of treating the vine under which it becomes dwarfed, with an enormous trunk. Fig. 5 shows a very old vine, such as are found in some of the vineyards of Europe, where this manner of pruning is called "buck pruning." The writer has seen vines in the interior of Mexico, which present the same appearance, in vineyards which were planted by the Jesuit Missionaries, and which must be over a hundred years old. The above account is given to encourage those who have only a limited space to grow vines, and all allusion to the summer treatment of vines is left out, as this will be noticed with appropriate illustrations at

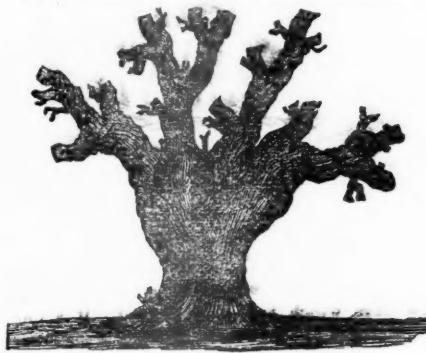


Fig. 5.—OLD VINE "BUCK" PRUNED.

the proper season. The engravings given above, except fig. 3, are copied by permission from Fuller's Grape Culturist noticed on another page.

Plant a Grape Vine this Spring.

There are few readers of the *American Agriculturist* who have not room for a single vine, and we hope that the most of them will put out several; at any rate, plant one. If it is on your own land, all the better. If the place is a hired one, do not let that deter you from planting, for somebody will get the benefit. Many who read the elaborate description given by some for preparing the soil, trenching and special manuring, etc., are led to believe that it is too much of a task and that it will involve the outlay of a great deal of time and some expense. Any soil which will raise good corn will do for the vine. The chief thing to be avoided is a wet soil. Such difficulty must be overcome by draining, or if this is not practicable, excavate the soil to the depth of two feet or more and put in a layer of brick, stones, and rubbish, to serve as a partial drain. If the soil is in good condition, no manure need be used at planting; but if it is poor, add a quantity of well decomposed manure or compost, or use about two quarts of ground bones to each vine, mixing it with the earth around the roots. A large supply of coarse bones, mixed with the soil, will furnish a lasting supply of vine food. The soil should be thoroughly pulverized to the depth of 20 inches or two

feet. Make the hole about five feet in diameter, with the bottom four to six inches deep in the center and eight to ten inches deep at the circumference. In the center of the hole set a strong stake, four or five feet high. This should be placed before planting the vine, so as to avoid injuring the roots in setting it afterwards. The vine, whether from a single eye, cutting, or layer, should be well rooted. To prepare it for planting, cut the roots back to at least two feet, and if they are not as long as this, cut off a portion of their ends at any rate, as this will cause them to throw out small fibrous branches. The top of the vine should be cut back to two or three buds. Set the vine in the center of the hole, close to the stake, spread the roots out to their full length and distribute them evenly, and then cover them with surface soil, working it in carefully around the roots; then fill up the hole and press it down firmly with the foot. When the vine begins to grow, rub off all but the strongest shoot, and keep this tied to a stake during the season. A very little trouble will soon furnish a large supply of this delicious fruit. Get a Concord, if but one vine; if two, add a Delaware; if more, half of each, if obtainable.

Notes on Cheese Making.

The Annual Report of the Farmers' Club of Little Falls, N. Y., contains an interesting letter from L. B. Arnold, detailing his visits to several cheese dairies in Western New-York. Some items are worthy of especial note: In three separate localities the treatment of the milk, the time of curdling, the fineness of the curd, and time of working, and heating up were very nearly alike. No. 1 salted highest; 2 and 3 salted alike. No. 1 scalded lightest; 2 scalded more than 1; 3 more than 2. No. 1 made the hardest cheese; 2 softer than 1, and 3 softer than 2. No. 1 was too hard; 2 about right, and 3 too soft. Mr. Arnold could see no way of accounting for this singular difference, except by referring it to the difference of moisture in the soil where the cows producing the cheese were pastured. Those of dairy No. 1 had a dry, gravelly pasture, watered by a single spring; No. 2 had a lower, gravelly, loam pasture, watered by living streams; and No. 3 had a still lower, alluvial and wet pasture, watered by living streams. One of the dairymen stated that, although he scalded his cheese more now, than when formerly making it on another farm, the product was yet softer; his present location is more moist than the former. These facts indicate that no uniform rule can be given for scalding the curd; the time should vary with the character of the soil. Perhaps, also, experiments may prove that as good cheese can be made in one district as another, provided proper variations of treatment are made to correspond with peculiarities of soil, etc. Facts are wanted.

"Sweet Herbs"—A Timely Hint.

Certain aromatic plants, not food in themselves, but used to flavor and make other food more agreeable, are called sweet herbs. These are more or less used in every family, and it is much cheaper to raise than to buy them, and they may be had thus of better quality than as usually found in the shops. Sage and Thyme are perennial, but they will give a moderate crop the first year from the seed. Sage may be transplanted to a foot apart each way, and Thyme to half that distance. After the first year the stock can be increased by dividing

the plants, or by cuttings. Summer Savory, Sweet Marjoram, and Sweet Basil, are the most generally cultivated annual herbs. The seeds are all very small and should be sown shallow, in very fine soil, and watered if the weather is dry. The plants may be thinned out to three inches, or be transplanted to that distance in rows a foot apart. All these aromatic plants are cultivated for their leaves and should be cut just as they come into flower. Sage and Thyme do not generally blossom the first year. These should be cut before frost. They should all be gathered on a dry day and tied in small bunches, or spread to dry in the shade in an airy room. Afterward, strip from the stems, and keep in close boxes or cans. Parsley, though not belonging to the sweet herbs, should not be forgotten, as it is always in request in the kitchen as a flavoring ingredient for soups, stews, and sauces, and as a garnishing or ornament to dishes of meat and fish. The double curled is the handsomest variety, and though not as strong as the plain, is generally preferred. The seed is several weeks in germinating; it should be sown in April, in light, rich soil, in drills a foot apart, and thinned out to six inches. A portion may be sown in the summer for keeping over winter, which may be done by a covering of litter, or cedar boughs. Plants may be taken up and set in a box or tub of earth, in a light cellar, where they will grow and afford a supply for winter use; or the leaves may be gathered and carefully dried.

Sow Spinach.

How many of the readers of the *Agriculturist* enjoy this really delicious vegetable? Probably not half of those who should have it in abundance. It is easily raised; the seed is cheap, and there is no reason that any one should be deprived of it who has a garden. If the directions given in the Calendar last autumn were attended to, seed was sown and the plants wintered over for the earliest spring crop: all that now needs to be done is to remove the covering of litter and stir the soil between the rows, and in a few days the plants may be cut. If this provision was not made beforehand, get the seeds in as soon as the ground can be worked. Sow the round-leaved sort in strong, rich soil, in shallow drills, 12 or 15 inches apart. As soon as the plants are large enough, thin to six inches, and when the leaves of adjoining plants touch, take out each alternate plant for use, leaving the others to increase in size.

New Zealand Spinach.

Mr. S. Mangold, near Cincinnati, O., writes that he considers this the most valuable of all garden vegetables. He sows as early as the ground can be worked, about two inches deep, in light, garden soil. The early growth is very slow, but when the plants have made 4 or 5 leaves they begin to spread, and the trailing branches extend until frost comes. They should stand three feet apart. Mr. M. says that he keeps this plant upon the same patch for several years in succession, as the plant seeds itself. He digs up the bed in the spring and sows lettuce, and by the time this is off the spinach is up to take its place. He says that 15 or 20 plants will give a family a good cutting every week. This is the *Tetrapanax expansa*, and is different from any variety of the common spinach. It possesses the merit of enduring the severest drought. The leaves are plucked and cooked like other spinach, making a good dish of "greens."



THE SHEEPFOLD AT YEANING TIME.—Engraved for the American Agriculturist.

The success of the shepherd during the lambing season settles the profits of the year in a great degree. Though repeating a little which has been said in previous numbers, we would enforce the doctrine, that the letting-sheep-alone system is the proper one. The ewe is neither retiring nor sensitive in her habits at this season, as a cow is when her time matures; she never hides her lamb so that days may elapse before it is found, but seeks only a sheltered dry place, where ordinarily without much pain of body or distress of mind she drops her young—very often twins and not very rarely triplets. There ought always to be provided warm shelter within closed sheds or barns, or, though less desirable, in open sheds like those in the picture above, on high dry ground, either floored or littered so as to keep the chill of the ground from the young lambs.* Remember that though they may endure a good deal of cold under some circumstances, it checks their growth, while many can not stand it, and die. It is not advisable to have loose, long strawy litter, for the lambs get cast and tangled up in it. The litter should be short and pretty well trodden down. Now and then a ewe gets in trouble and needs assistance, but it is so seldom that it is hardly worth while to disturb a flock of sheep which are rather wild, by visiting them much at night. It is true also that those active breeds which are timidous and apt to start up and run and huddle when visited at night, are least apt to need any care. The Cotswolds and other of the heavy mutton sheep are most likely to need assistance. This should be rendered by an old shepherd if possible. A person with no experience can only act as practical common sense dictates, and it is not worth while to lay down

any rules. Sometimes a ewe's strength fails when her labor is protracted, and then a teacupful of malt liquor, or a little gin and water may be given at intervals, enough to stimulate and quicken the circulation.

The lambs which are not lively and in good condition—those found chilled and stupid in uncomfortable places, perhaps wet and shivering, ought to receive the tenderest care of the shepherd. He should always have at hand a bottle of fresh ewe's milk as near blood warm as may be, which should first be administered. We have known farmers administer rum and molasses mixed with milk (a weak milk punch), in small quantities to weak chilled lambs with good results. It sometimes happens from disease of the bag or from the flow of milk not coming at once, that a ewe can not suckle her lamb. In such cases the lambs must be fed from ewes having plenty of milk, or be removed altogether from their dams and given to others which have lost lambs or have plenty of milk, which by perseverance is usually accomplished without much difficulty.* Lost lambs whose dams do not recognize them, must be provided for in the same way. When one lamb is substituted for another, the plan which saves all further trouble usually, is, to cut off the head and legs of the dead lamb, slip off the skin and drawing it on over the substitute, tie it so that the licking and fondling of the ewe will not get it off, and turn it to the foster mother, who will almost invariably receive it, especially at night and after the skin has been worn long enough to be warmed through. The first milk that flows after yeaning, is of a peculiar purgative character, not fit for lambs several days old, while very necessary for newly born ones, so that if these be deprived

of it they are apt to contract diarrhoea after a few days, which is frequently fatal. If a ewe has twins at her first yeaning, unless she have an abundance of milk it is well to separate one, and this is best done after the second day. The flock ought to be watched to see that ewes with twins do not disown one, or that lambs and dams are not otherwise separated; also care should be taken that strong lambs with voracious appetites do not suck more than one ewe as they sometimes do, robbing others of what rightfully belongs to them.

Green Food for Stock.

Those who from having long been confined to a diet of salt junk and potatoes, sit down for the first time in the season to enjoy early grown greens, lettuce, and green peas, may understand something of the longing which cattle and other stock feel for the return of grass feed in spring. It is, however, unwise to indulge them in a range of pasture, until the growth is well established. Pasture may be greatly injured by too early cropping, and by trampling while the ground is soft. No hoof should enter a meadow or grain field in spring time. Beets and carrots will now come to an excellent market if they are on hand. It is well, where only a small quantity are raised, to keep them over for spring feeding. If none have heretofore been cultivated, the desire for them now, should lead to preparation of ground for a crop the present season. Plow deep, subsoil if needed, manure thoroughly, and sow in drills 1½ to 2 feet apart, according to the crop, the latter part of this or the first of next month, except for turnips, which are better left later.

Helps in the Garden.

In laying out and planting the vegetable, fruit, or flower garden, there are several convenient implements which can be made with little trouble, and which will greatly facilitate work.

A GARDEN REEL.—This is to hold a line which is to serve as a guide in running straight lines from one point to another. Iron ones are sold at the seed stores, but a home-made one will answer as well. Fig. 1, shows the shape. The side pieces, *A*, *A*, are made of curved limbs, or may be worked out of straight stuff, about $\frac{1}{2}$ inch in diameter, and 12 to 15 inches long. The cross-pieces, *B*, *B*, are 2 inches wide, $\frac{1}{2}$ to $\frac{1}{4}$ inch thick, and 1 foot long; these have holes near the end through which the side pieces pass and project above and below for about an inch. The centre stake, *C*, is 2 to $2\frac{1}{2}$ feet long, 1 inch in diameter where it passes through the cross-pieces, and with a shoulder below the lower cross-piece, from which place it gradually tapers to a point. A pin through the upper end of the centre piece, above where it passes through the

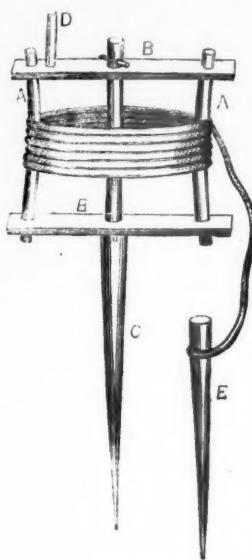


Fig. 1—GARDEN REEL.

pin, *E*, which is made about eighteen inches long, and of the size of *C*. All parts of the reel should be made of hard wood, and with careful use it will last for years. To use the reel, thrust the stake portion firmly in the ground at one end of the bed, or other work to be laid out, and walk off with the pin to the desired point; drive the pin into the ground, then stretch the line tight and secure it by taking a turn around the projecting corners of the frame of the reel.

A MARKER.—Very convenient for making drills at equal distances. Fig. 2, shows the usual form. A piece of scantling has a handle fastened to it horizontally and well braced. Teeth of hard wood, about 18 inches long, rather bluntly pointed, are fastened at the distances required for the rows. It is convenient to have three sizes, with the teeth at 12, 15 and 18 inches apart. To use the marker set the line as a guide and run it with the first tooth next to the line; afterward the marker is guided by running one tooth in a mark previously made.

COMPASSES.—A pair of rude compasses made of lath or light stuff, about 3 feet long, fastened together at one end by a screw so that the points can be set at any required distance. This is convenient in spacing off distances at which to set plants in rows. The line being stretched the length of the row, the spaces can be marked

off very rapidly by the compasses. It is very useful also for striking circles or curves.



Fig. 2—DRILL-MARKER.

PLANK.—A plank a foot or 15 inches wide, and long enough to go across the beds, will be found very useful in sowing many seeds. Lay the plank square across the bed, and with a small stick or the finger make a scratch or drill, using the edge of the plank as a ruler. Sow the seeds, then turn the plank over and put in another row; by turning the plank carefully, the rows will be just as far apart as its width and thickness, and the plank serves to stand upon while sowing, thus avoiding any trampling of the bed.

The Turban Squash.

This variety is not a new one, but it is not very generally known. It has recently been cultivated quite largely by J. J. H. Gregory, of Marblehead, Mass., the gentleman to whom we are indebted for the introduction of the Hubbard; he thinks its merits have been overlooked. It has also been called the Acorn squash on account of the prominence at the blossom end. The engraving shows a specimen with this protuberance unusually large; the squashes upon the same vine will vary in this respect from the form here shown to those in which it is but slightly developed. The specimens shown by Mr. Gregory at the Exhibition at the *Agriculturist* Office last autumn, were about 8 lbs. in weight, and of a fine orange-red color. The flesh is high colored, very heavy, fine grained, dry, sweet, and of good flavor, and it is in perfection when first taken from the vine, while the Hubbard requires to be kept to develop its good qualities. Mr. Gregory gives the following notes in regard to it. "The Turban



TURBAN SQUASH.

should be planted in good soil about 8x9 feet, and not over two vines left to the hill. Under high cultivation it will yield at the rate of six tons to the acre, which it did with me during the past season. It should be planted as early as the season admits, be permitted to grow through the entire season, if intended to store

for late keeping. Gather and store within a few days, in a dry, airy apartment, laying the squash on its side, not standing it 'acorn' down as its shape invites, for the calyx end is the tenderest part of the squash. Avoid the bad practice of piling this or any other variety of thin skinned squash in the field, as a series of cold rains will be sure to injure their quality and keeping properties. The Turban is a good keeper." With the Turban, Yokohama, and Hubbard, there would seem to be but little room for improvement in late squashes, in quality at least.

The Martynia.

This, like the tomato, was formerly cultivated as an ornament, but is now finding its way into the vegetable garden, though the seedsmen in their catalogues still include it with the flower seeds. The most common species is the *Martynia proboscidea*, a native of the warmer portions of North America. It is a rather coarse annual, with strong spreading branches, and coarse clammy foliage. The flowers are in clusters and about as large as those of the fox-glove, white and marked in the throat with yellow or purple spots. They are succeeded by a curious



BRANCH OF THE MARTYNIA.

curved pod, which when young is fleshy, but which soon becomes woody, and when quite ripe, splits at the beak into two strong bent horns. Each pod contains several large, black, rough seeds. The engraving shows a branch with flowers and fruit all of reduced size. The botanical name is given in honor of Prof. Martyn, an English botanist of the last century, and its common names of Unicorn-plant and Buffalo-horn, are in allusion to the shape of the fruit. The unripe pods, taken when very tender, make most excellent pickles, as is noticed on another page. There are other species with yellow and purple flowers, but we have not known the fruit of these to be used, though it will probably answer the same as this one. When cultivated for the fruit, it should be grown on light, warm soil, as too rich soils produce too great a growth of stem and leaves. The plants should stand at least two feet apart. The seed may be early sown in the place where it is to remain, or it may be started earlier under shelter and then transplanted. Sow when danger from frost is over, and cultivate the same as tomatoes.

Grape Notes from Missouri.

In no State has grape culture been prosecuted with more earnestness, or given more satisfactory returns than in Missouri. The following extracts from a letter to the *American Agriculturist* from Geo. Husmann, Esq., of Hermann, Mo., will be interesting to grape growers all over the country. Mr. Husmann is well known as an extensive vineyardist, and one whose judgment in regard to varieties stands high among pomologists. In the February *Agriculturist* the statement was made, upon what we considered good authority, that the Norton's Virginia was only half hardy. Mr. H. says: "The Norton's Virginia is one of the hardiest of all the grapes I know. It is fully as hardy as the Concord and Hartford Prolific, and much more so than the Catawba and Isabella. Wherever it has been planted in the Western States, Ohio, Illinois, Kentucky, Iowa, Wisconsin, Indiana, and California, it has proved hardy, healthy, productive, and successful in every way. I have been told, however, that it does not make a good wine in New-York, and from the taste of the fruit I tried when there last fall, I should not think it would make wine there, without the addition of sugar to the must. For the West, I think it the best wine grape, which has yet been fully tried. I do not pretend to speak for the East, as I think the whole question of the success of a certain grape, is one of locality. We can not presume to lay down a rule for our eastern brethren, nor they for us."

The Concord also makes a very good wine here, under proper treatment. The grape should be allowed to get very ripe, then gathered, mashed, and pressed *immediately*, without fermenting previously. Wine made from it under this treatment, was sold for \$2.00 per gallon, in the same cellar where the best Catawba (and we know how to make good Catawba here,) brought only \$1.65. The Concord is, under proper treatment, immensely productive, healthy and hardy, and can be safely said to yield double the quantity of the Catawba, one year with another; this would seem to indicate it as a wine grape for the West, as well as a market and table fruit. This may seem to be strange to your eastern readers, who know the Concord only as it is there, but let me tell you, (and I can do so knowingly, having tasted it in both localities,) they do not know what the Concord is with us, and how much it has improved on its travels westward. This may be said of nearly all the grapes I have tasted there, not excepting even the Delaware, which is much sweeter here, although not as healthy as with you. The Herbemont is also very successful here as a wine grape, but little subject to disease, very productive, and makes a very fine, light red wine. It is, however, too tender for some of our winters, and should be pruned in the fall, bent down, and covered with earth. This, however, is not such a very laborious task, if done in the proper manner, and can be done at an expense of say \$5 to \$10 per acre, which includes taking up in spring, a trifling expense, which this truly noble grape will richly repay.

The *Cassady* promises to be very valuable as a grape for purely white wine. It is a great bearer, healthy, and hardy. The wine will equal if not surpass the best made wines of the Rhine, in flavor, body, and quality.

Cunningham.—This grape belongs to the same class as the Herbemont, and requires similar treatment. It is rather an uncertain bearer, but the wine it produces is of such superior excel-

lence, that it will make up in price for the deficiency in quantity. It makes a true sweet wine, of great body, and peculiar flavor, which I think would sell readily at \$4 to \$5 per gallon.

Taylor or Bullitt.—This little grape promises highly for white wine, and as it is healthy, vigorous, hardy and productive, may one day rank high as one of the wine grapes of the West.

The *Clinton* also promises highly as a wine grape here. It is healthy, hardy, productive, and I doubt not, will make a very fine red wine. It has not been tried here as much as it deserves.

The *Delaware* makes a very superior wine, but the vine seems to be too feeble and unhealthy, to recommend it for general cultivation here. Where it succeeds, as it evidently does at the East, and around Cincinnati, it ought to be planted extensively, as the wine is truly hard to beat. These are the most prominent wine grapes we have now, which have been tested to some extent. Among those promising well for that purpose, I would name the Cynthiana, Arkansas, Lenoir, Alvey, Louisiana, Rulander.

Norton's Virginia wine now sells readily at \$3 per gallon, and the whole quantity grown here last season, is already disposed of. To prevent much useless inquiry, let me here remark that the whole salable stock of Norton's Virginia, Concord, Catawba, and Cassady vines in this neighborhood, is already sold, and no plants of these varieties can be had here this spring. The demand has been unusually large, and the whole stock amounting to about 500,000 vines, was sold during fall and winter. Herbemont, Cunningham, Taylor's Bullitt, Delaware, and a number of other varieties, can yet be supplied. If any of your readers has a large supply of Concord vines to sell, they will be gladly bought in this neighborhood, if sold at reasonable rates.

Your suggestion as to the mixing of the juice of several varieties is a good one, and has been tried here with excellent success; mixing the juice of the Concord and Norton's Virginia, and also Herbemont and Norton's Virginia, gives wines which are in my opinion, superior to that from any one of these varieties alone."

Cranberry Culture—How to Get Rid of Sedges, etc.

With Solomon we agree in the sentiment that "There is safety in multitude of counsellors"—if they only be wise ones. A Maine subscriber to the *American Agriculturist* proposed the following four questions, and turning to our friend Hon. Wm. H. Starr, of Connecticut, we received the reply which is given below: Questions—
1st. Can the sedges and moss be killed (roots and all) by flooding with water? 2nd. How long, at what season, and to what depth must the water cover them to this end? 3d. Will the vines now growing there survive such treatment? 4th. Is there any other mode of getting rid of the sedges, except by the laborious process of removing the turf? Eastwood has nothing on these points.—C.G.A., Augusta, Me."

Response.—"The locality or exposure of the meadow your correspondent does not describe, simply remarking, 'It is on the shore of a pond.' This is a favorable locality, if the water is not supplied from cold springs in the neighborhood, which probably is not the case. The soil is 'peat,' which, with a little modification, is very favorable. The common cranberry, (*Vaccinium macrocarpon*) is already growing. This, also, indicates favorably. The plot is convenient for winter flowing, another very favorable feature. As to his first inquiry.—This can be done by flowing in fall, and keeping the plot covered with water from 12 to 18 inches deep, *not less than one entire year*, and possibly two. The roots of the sedge are very tenacious of life, and not easily killed by water, and the great difficulty would be, the *cranberry* plants now there would not survive this treatment. This, I think, briefly answers the 1st, 2d and 3d queries of your correspondent. I reply to his fourth interrogation, yes; if he can draw off the water from the pond, by ditching or otherwise. If he can so far drain the plot as to plow it early in the fall and turn under the moss and sedge pretty deeply, and leave the peaty soil to freeze (the more thoroughly the better) during the winter, the next June it will be in a perfectly friable state for preparing and putting in a condition to plant the vines. Then, occasionally during the summer raise the water, if the season should prove dry; and before the heavy 'black' frosts occur, flood the vines a foot or eighteen inches deep, until the following spring; then drain the plot, and by the succeeding fall the vines will be established. If he cannot drain the meadow sufficiently for plowing, the labor of removing the sod is not very formidable. If he were to remove the entire surface of the highest portions of it, and cover the lowest parts with beach or bank sand to the depth of three inches, and then set his plants, he would probably be successful; but draining and plowing is by far the more preferable method, if it be possible.

A Word for Shrubs—Plant Them.

It requires a large place to have stately trees, but the smallest yard can have shrubbery. By a judicious planting of shrubs in clumps, an impression of extent can be given to a place of moderate dimensions. The distinction between shrubs and trees is not definitely drawn, but the former term is usually applied to those woody plants which branch low down and do not show a distinct trunk. Some shrubs are grown for the beauty of their foliage only, while others are prized mainly for their flowers. In planting shrubs we would not neglect the time-honored Lilac and Snow-ball, for they are associated with our earliest recollections, but in planting these we would get the improved sorts of Lilac, and while we would get the tall Snow-ball for old acquaintance' sake, we would remember the *Viburnum plicatum*, which is just a snow-ball in miniature. If asked to name three of the most satisfactory and readily obtainable shrubs, we should say: *Weigela rosea*, *Forsythia viridissima*, and *Cydonia Japonica* or Japan Quince. The Wigela is full of flowers in spring and is a beautiful, hardy shrub. The other two have the merit of flowering early, and their foliage is fine when the bloom is over. A long list of desirable shrubs might be given, but the farmer who wishes to beautify his front yard and has not access to the nurseries, would be deterred by the list of names. As it is for those who have taste, but not the facilities or means for procuring the products of the nurseries, that this article is especially intended, we will name a few native shrubs, which are easily procured, and which will give satisfaction. The High-bush Cranberry, which is common in swamps, is very desirable and showy when in flower. The *Spiraea opulifolia*, popularly known as Nine-bark; the Meadow-sweet, which is *Spiraea salicifolia*, and the Hardhack, which is still another of the same genus, and is *Spiraea*

tomentosa, will do well in cultivation, the first growing from 5 to 10 feet high; the second, from 2 to 4 feet, and the last, 1 to 2 feet. Then there is the Pepperidge, *Clethra alnifolia*, which is common in swamps, especially near the coast: this makes itself quite at home in cultivation, and shows its white spikes of most fragrant blossoms in August, a time when flowers are scarce. The whole tribe of Cornels or Dogwoods are valuable and numerous. *Viburnums*, or Arrow-woods, are worthy of being introduced into the shrubbery. The Spindle-tree or Wahoo, *Euonymus atropurpureus*, must not be forgotten, for though its flowers are not showy, it has good foliage and its berries are very brilliant in autumn. This list might be extended indefinitely, and should by all means include the Shad-flower and Wild Crab, but it is left to the reader to fill out with whatever has struck him as being beautiful in the wild state. So little do persons observe our wild plants, that the commonest things transferred to cultivated grounds, will be admired as something rare by those who pass them in their daily walks. Shrubbery to be effective, should be in clumps and consist of various sorts, planted quite thickly, the lowest growing ones, of course, upon the outside.

Influence of Stocks upon Grafts.

George S. Rawson, Middlesex Co., Mass., writes on this subject to the *American Agriculturist*: "For the same reason that an early stock will hasten the maturity of grafted late fruit, a late stock will retard the maturity of early fruit. When I purchased the land on which I now live, there were two apple trees of some kind of late fruit. I grafted one with the *Garden Royal*, a beautiful little dessert apple, that originated in this section, and which usually ripens about the first of September, and decays soon after it is fully ripe. But those on my tree do not ripen until all the *Garden Royals* in this neighborhood are ripened and gone. The size is also very much increased by their later maturity, and the quality is also greatly improved—so much so, that visitors often say they 'never saw such *Garden Royals* as mine.'

"The other tree was grafted with Hubbardston Nonsuch, and they remain hard until they rot. I cannot see how a fruit grower can fail to observe the influence of the stock upon fruit. There is no apple extensively cultivated but has been changed more or less by the stock upon which it has been grafted. Witness the different varieties of the Baldwin, R. I. Greening, and Roxbury Russet."

Mixing Flowers.

A good arrangement of colors goes far to perfect a flower-garden. By suitable study, any one who has a knowledge of the habits of plants can produce brilliant effects. Last summer, the writer of this enjoyed for some time the daily view of a magnificent oriental scarlet poppy set off against the abundant blooms of a shrubby white spirea.—A little forethought on the part of the gardener will produce most agreeable results. Most of the *plans* which we have met with in the horticultural journals, foreign and domestic, are defective in several respects; first, in recommending plants which bloom at different seasons of the year; also in arranging those which flower the whole summer with such as bloom but a few weeks; and lastly, in recommending for popular use those which are quite

rare and expensive. Now, it is folly to assort the fall-blooming Aster with the spring-blooming Hyacinth, or Candytuft with scarlet Geraniums, or to advise as "very good" the Victoria regia and *Lilium auratum*—the latter to be had at "only \$40 a bulb." But it is wise to recommend putting together different colors of Portulaca, in a bed by themselves; also to classify the colors of the Verbena as carefully as a lady does the shades in her worsted work or on her bonnet and dress. A bed of the various summer blooming Geraniums always looks well. Whoever has a little spare change may well spend it in an assortment of Heliotropes, Ageratums, Feverfew, Lantanas, etc., and they will sort well and bloom in company all summer.

Everlasting Flowers.

Several flowers, the texture of which is peculiarly firm and paper-like, have received the name of "everlasting" from the fact that they retain their form and much of their color when dry. Tastefully made bouquets of these are pleasing ornaments for the house, and are much more satisfactory than the paper or worsted-work caricatures we frequently see. As spring is the time to provide for winter, we give a list of varieties that seeds may be procured in season. They are all desirable flowers in the garden also, if not needed for dry bouquets. At the head of the list we place the *Acroclinium roseum*, as it is to our taste the prettiest of all. The flower is over an inch in diameter, the rays, or border, of a bright rose color, with a yellow center. There is a variety *album*, with pure white rays; the two make a fine contrast. *Rhodanthe Manglesii*, is another fine annual, but it sometimes fails to do well in out-of-door culture. This is also of a fine rose color and has flowers of a peculiar grace and beauty. *Rhodanthe maculata*, *atrosanguinea* and *maculata alba*, are varieties of this, and have different colored flowers, the last two being quite new, and the seeds selling at a high price. Various species of *Helichrysum* or Straw-flower, though coarser than the foregoing, and strong growers, are very valuable, and afford a great variety of colors. The same may be said of the different sorts of *Xanthemum*. *Ammobium alatum* produces small white and nearly globular flowers.—All of the foregoing are annuals which will grow readily in any good garden soil. The flowers, if wished for winter bouquets, should be cut before they fully expand, and dried in small bunches in the house. The old *Globe-amaranth*, *Gomphrena globosa*, should not be forgotten. Of this there is a great variety of colors, and if picked at the right time they last very well. Scald the seeds before sowing, and pick the flowers when of full size, but before the lower scales begin to drop.

To Improve the Lawn.

It is now supposed that you have one. It was made several years ago, but weeds have got into it, ant-hills appear in some places, there are depressions and elevations, and here the grass has died out. Obviously, improvement is needed.

The time for making improvements is now, as soon as the snow and frost have disappeared, and before the grass has made much growth; one can see the inequalities of the surface better than at a later period. Taking a bundle of small stakes on your arm, go over the whole lawn carefully, sticking in the pegs at every elevation and low place. Then with a sharp spade pare off the

turf, and level the soil up or down, as the case may require, and then return the sods to their places, pounding them down smooth. So, go over the whole lawn, until there is no longer any perceptible unevenness of surface.

For ants, a correspondent of the Horticulturist strongly advises the use of ground coffee which is to be sprinkled on the hills. The writer says that the ants will disappear in fifteen minutes. He says "it never fails." Is it so?

The weeds, be they dock, plantain, thistles, dandelion, or such like, should be dug out by the roots. It will not answer to cut them off just below the surface. To bring up the weak grass and to cover the bare spots, spread over the whole lawn, a thin coat of well rotted manure, ashes, bone-dust, or poudrette.

Now, cut out the margins of the walks and flower beds anew. Ascertain the original lines exactly, and renew them with the sod cutter, or sharp spade. Few things give a country place a more finished look than neatly cut lines of walks and roads. Clean the roads and walks from every weed, and if flower beds have been cut out in the grass, eradicate all grass and weeds from them. Finally, bring out the roller, and trundle it back and forth over the entire surface, pressing back all grass roots that the frost may have thrown out, and smoothing down all parts alike, and then the spring work on the lawn will be well along, if not done.

Early Beets and Carrots.

The earlier these can be had, the more acceptable they are, and with a little pains they may be brought on much earlier than usual. The soil for both should be light, warm, deep, and rich with manuring the previous season. The best early variety of beet is the Bassano, or, as called by some, the Extra Early Turnip Beet. This though not large, is quick growing and very good. Soak the seed in warm water for 24 hours; pour off the water and keep the seed covered in a warm place until the sprouts begin to show themselves, then roll the seed in plaster and sow. In treating the seed in this way, do not let the sprouts get too long, as there is danger of breaking them, but sow as soon as they begin to show themselves as little tender points breaking through the shell of the seed. Sow in drills, 12 or 15 inches apart, and when the plants are 2 or 3 inches high, thin to 8 or 10 inches in the row. An ounce of seed will sow about 100 feet of row. As the beet seed is really a sort of cup, or capsule, containing frequently two or more seeds, it often happens that two or three plants will come up so close together as to appear like one. These crowded plants should be looked to, and only one left. If there are any deficiencies in the rows, they can be filled by carefully taking plants from the crowded places and transplanting them. Hoe often and weed thoroughly.—The Early Horn Carrot is the best early. Soaking the seeds in tepid water for two days will hasten their germination. A friend informs us that he gets carrots up in three or four days by keeping the moistened seeds in a warm place for five days and then drying off in ashes or plaster. We have not tried this plan. An ounce of seed will sow one hundred and fifty feet of drill. Sow in 15 inch drills, cover half an inch, and thin to four inches. As the plants are very small when they first show themselves, it is a good plan to sow a few radish or turnip seeds with those of the carrot seed, in order to distinguish the rows readily at the first weeding.



Turnip-rooted Celery or Celeriac.

This fine vegetable, for a long time exclusively grown and used by the Germans, is now becoming generally known and appreciated here. It is a variety of celery, the short stem of which swells out into a kind of tuber, as shown in the engraving; this is the eatable portion, and if well grown, is tender and has in a marked degree, the flavor of celery. It is sliced and stewed, and served with drawn butter. It is also boiled, and when cold, sliced and dressed as a salad; it is used also in soups. Celeriac as found in the markets is from two to three inches in diameter, but it is said that on the Continent in Europe, it frequently grows to weigh three or four pounds. Sow the seeds early in a seed bed, and then transplant to a light, rich soil, setting them in rows 18 inches apart and about a foot distant in the rows. Watering occasionally with liquid manure while the plant is growing, is essential to success. It is not planted in trenches like other celery, but upon the surface, taking care to set the plants rather shallow. In transplanting, take off some of the outside leaves, and if there are any strong lateral roots they should be removed. In cultivation, care should be taken not to earth up the plants. The bulbs are taken up in October, and preserved during the winter in sand. The seeds may be had of all regular seed dealers.

The Cauliflower.

Frequent complaints come to the *Agriculturist* of want of success in cultivating the cauliflower. Having raised an abundance for several years with no more pains than were taken with early cabbages, we are inclined to attribute the failure, where it occurs under good culture, to the poor quality of the seed. Perhaps there is no plant in cultivation more changed from its natural state than this, and any cause which may interfere with this unnatural condition, may show itself in deteriorated seed. A well grown cauliflower is one of the triumphs of good gardening, and it is so delicious and delicate upon the table that it is worth risking several failures

to secure one success. The Early and Half-Early Paris, Thorburn's Nonpareil, Large Asiatic, and an American sort of which the name is lost, have all given fine crops. For the early crops the two Paris sorts are preferable. The seeds should be sown in a hot-bed or cold frame, and treated just like cabbage plants. If the plants become of proper size to transplant before the weather becomes suitable, they may be put into small pots and kept under a frame until safe to set them out. Plant in very rich, deep soil, two and-a-half feet apart each way; hoe very often and deep, water in dry weather, give an occasional taste of liquid manure, and when large, draw the earth up around the stems. If these directions are followed, and insects kept off, there is no difficulty in raising cauliflowers provided the seed be good.

Cultivation of Sea Kale.

"A. L.", of Green Co., Wis., writes that he has a plant in his garden raised from seed sent out by the Patent Office, for which he cannot find any name, and of which he cannot learn the use. The plant is described as enduring the winter and having leaves like the cabbage, only narrower and very heavy. We suppose the plant must be the Sea Kale, a vegetable much prized in Europe, and one which is but little known in this country. The seeds are sown in drills, in a seed bed, thinning the plants to 6 inches and keeping them well cultivated. The following spring a rich bed is prepared by trenching and manuring as for asparagus. The plants are to be set in rows, 3 feet apart and 18 inches in rows. Cultivate them through the season and in the fall when the leaves die, ridge the earth up over the crowns of the plants to the depth of 8 or 10 inches. The following spring,



SEA KALE.

the young shoots, which are the eatable portion, will push up through the ridge of earth, and are to be cut off while still crisp and tender, removing the earth for the purpose. The engraving represents one of the shoots. After the crop has been taken, the earth is levelled and manured, and a strong growth encouraged to prepare shoots for next spring. Each autumn the ridg-

ing is repeated. Good plants can be raised from cuttings of the roots about 4 inches long. The shoots are cooked and eaten like asparagus, and are very highly esteemed by many persons.



Okra—An Excellent Vegetable.

This garden vegetable is little known, except by those living near cities, but it is one which most people soon become very fond of when they use it. It is an annual, growing from two to six feet high, with rather coarse leaves, and light yellow flowers having a dark center. The plant belongs to the same family as the hollyhock and cotton, and the flowers of all three bear a strong resemblance. The young pods are the eatable portion. They are from four to eight inches long, and about an inch in diameter, angled, or several sided and tapering toward the upper end. These when tender are very mucilaginous, and are used for thickening soups and stews. The dish called gumbo at the South, consists of chicken stewed with these pods; and the same name is sometimes applied to the plant itself. The pods boiled in water and dressed with drawn butter, after the manner of asparagus, are much liked by many. Being of southern origin it requires a long season, but lately a dwarf and early variety has been introduced, which is adapted to northern climates. One ounce of seed will sow one hundred feet of row. The Improved Dwarf is the best variety; it should be sown when the ground becomes warm, in rich soil, in drills three feet apart, and the plants should be thinned to one foot in the row. During the summer the plants should be kept clean of weeds and be slightly hoed up in hoeing. The pods are cut when nearly grown, but still tender. The green pods are sliced and dried for winter use. The ripe seeds are among the many things which have been used as substitutes for coffee, and have been advertised as "Illinois Coffee."

TRY SOME DWARF PEAS.—Those who find it too much trouble to furnish the tall growing peas with brush or other support, should try some of the dwarfs, of which there are several varieties. They grow from 8 to 18 inches high, and are quite desirable for small gardens. Tom

Thumb is one of the earliest dwarfs; it grows only 8 inches high, and its pods all come to maturity about the same time, which is an advantage in a market pea, but not a good quality for one grown for family use. By sowing at intervals of a few days, this difficulty can be met. Bishop's Dwarf Prolific and Bishop's Long Pod are both good sorts, growing 1 and 1½ feet, and affording several pickings. Queen of Dwarfs is said to be fine; we tried it in a very dry season, and had a bad crop. The Strawberry Prolific is another good dwarf kind. McLean's Princess Royal is a recently introduced sort, highly commended in the catalogues. As it is not well to give them fresh manure, sow in soil already in good condition, as early as the ground can be worked. The drills may be 15 inches or 2 feet apart, according to the height.

What is Inside of a Plant.

If the reader has given attention to the articles with the above heading, in the previous two numbers of the *Agriculturist*, he has a general idea of the internal structure of plants, as shown by the microscope. There remain, however, one or two points to add to the account already given. The leaf is that part of the plant in which the great work is done of converting the crude sap, taken from the soil, into material fit

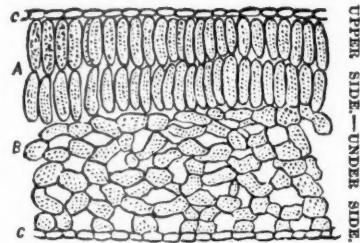


Fig. 10—SECTION OF BALSAM LEAF.

to add to the growth of the plant. It was hinted last month that the leaf contained cellular tissue which forms the soft part or pulp, and woody tissue and ducts of which the veins or frame work are composed. It will be of interest to examine now the internal structure of the leaf, or at least the arrangement of its cellular tissue. In order to this, an exceedingly thin slice is taken crosswise of the leaf, by means of a razor or very sharp knife; this being placed under the microscope will appear like fig. 10, which shows a magnified edge of the leaf of the common Balsam cut across. Here we have the simple cells described on page 49 (February), but

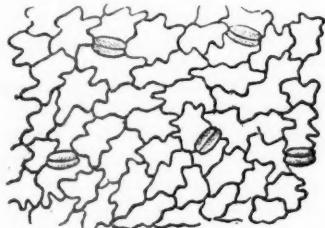


Fig. 11—EPIDERMIS OF LEAF.

lying so loosely together that they do not present the many-sided form seen in most other parts of the plant. In the upper part of the figure, which is the part towards the upper surface of the leaf, the cells, A, are elongated and packed quite closely together, while toward the lower surface they are of irregular shape, B, and lie quite loosely, so that there are large spaces or air passages between them. The leaf is covered, as are all portions of the plant,

when it is young at least, by a thin, transparent skin or *epidermis*, which adheres more or less closely. The epidermis (outer skin) can be readily detached from the onion leaf; it appears like a thin film. This consists of a single layer of flattened cells placed side by side, and of various shapes in different plants. Fig. 11. shows the epidermis of the Balsam leaf as it appears when magnified; the cross section of its cells is shown in fig. 10. at C, C. The epidermis is impervious to air and water, and as this covers the leaf completely, the question may be asked, how then does evaporation, which we all know does take place from the leaf, go on? This delicate skin of the leaf, the existence of which is known to very few persons, is one of the most beautiful contrivances imaginable, and is only one of many wonderful things which lie all around us unnoticed. The leaf is a part of the plant which requires free communication with the air, in order that evaporation may go on, and that other changes, which require similar conditions, may take place within it. At the same time, such are the varying conditions of the atmosphere that evaporation should not proceed too freely, as liquids would be thrown off faster than they could be taken up by the roots, and the plant would wilt, as happens even now in a time when both the soil and air are very dry. To answer all the needs of the leaf, it is covered with this skin or epidermis which is generally impervious to air and vapor, and then at certain points it is provided with orifices which open and close as the condition of the plant demands. In fig. 11. are five double cells looking unlike the others there represented; these are the guards or doors to the openings of the epidermis, which communicate between the interior of the leaf and the atmosphere. These openings are called *Stomates* (from the Greek word for mouth), or *breathing pores*. Each of them is guarded by two cells; while the greater part of the epidermis is colorless these particular cells are green like those within the leaf, as indicated in the figure by the dots on them. These cells are very sensitive to the effect of moisture; when moist they swell and spread apart and afford a free communication between the air and the interior of the leaf; when dry they gradually contract and close the opening. In fig. 12 the left hand figure shows one of the stomates open, and the right hand shows one closed. It will readily be seen how this simple and beautiful apparatus works. When the air is moist, the breathing pores open and allow the passage of vapor and air; but when it becomes too dry for the good of the plant, they close and the functions of the leaf are in good measure suspended until a suitable condition of the atmosphere returns. These stomates are found much more abundantly upon the under surface of the leaf than they are upon the upper, as there they are shielded from the direct action of the sun. This will show the reason why the pulp or cellular tissue of the leaf is so much more loose and open on the under side, as is shown in fig. 10; the numerous open spaces or air passages in the tissue connect with these stomates, so that whatever the plant requires should pass in or out between the air and leaf, passes mainly through the under surface. The number of stomates varies in different plants. The under side of the apple leaf is said to have 24,000 to the square inch, while some others of different species have many more.

THE HOUSEHOLD.

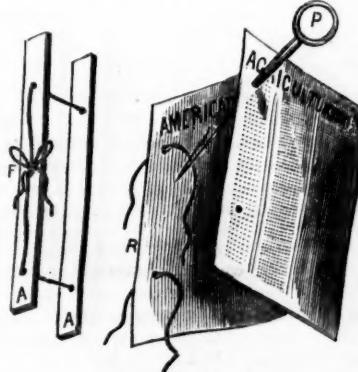
Cigar-box Ornaments, Brackets, etc.

A leisure hour and a jack-knife are often well employed in executing some tasteful device, which may serve to ornament a room, or be valued as a gift by some friend. There are so many little gems of photographs now-a-days, so many pretty statuettes, and various ornamental objects, which are very well exhibited upon brackets, or in similar positions, that we give the accompanying engraving of a bracket made of the wood of a cigar box. Its construction is evident from the picture, and so simple that it needs no description. Similar brackets are made with but one support, placed under the center of the shelf; but as the writer happened to have the little owl's head (which is a natural one) the design was made with a view to its accommodation. It has given some of our friends pleasure, and some of the young readers of the *American Agriculturist* may take a hint which will give agreeable employment to their pocket cutlery. One's friends value such little things much on account of the neatness of execution, but more on account of the beauty and originality of design, and there is really no limit to the variety of styles and forms which may be made of this common and very cheap material.



Cheap File For Newspapers.

The "Jacobs" File for holding papers, offered in our premium list, is the neatest arrangement for the purpose we have seen; but many who do not care to go to the expense of such a one, will like an arrangement described by a subscriber to the *American Agriculturist*, S. B. Elliott, Tioga Co., Pa. It is not new, but is none the less useful for that: Take two pieces of stiff pasteboard, each the size of the paper when properly folded. These are for the covers. Make of hard wood, two strips, A, A, fig. 1, about $\frac{3}{4}$ of an inch wide, and 3-16ths of an inch thick, and as long as the covers. Through



NEWSPAPER FILE.

these bore two holes with a small gimlet, each hole about 3 inches from the end. Take a piece of narrow tape or good stout small cord, about two and one-half feet long, and put it through the holes in one of the sticks. Make holes in the pasteboard covers to correspond with the sticks, and put the string through one of the covers, and you are ready to put in papers. F, represents the sticks and strings without either covers or papers. At R, is seen one stick and cover, and the manner of putting in a paper. To do this properly, lay one of the

sticks on the back margin of the paper and make the holes by that, so that they will all agree; then run the awl through the paper, draw the string into the slot in the awl, pull the awl back out of the paper and you have the string drawn through. Then put on cover and stick, draw the strings up tightly and tie them, and you have the whole thing complete. The awl, *P*, can easily be made out of a wire, such as is used for balls of pails, with the aid of a sharp cold chisel and good file.

The Bread Question.

The communication of a "Crusty Bachelor" in the January *Agriculturist* (page 22) has called out many responses, most of which give the reasons why good bread can not always be had. The following extract from the letter of "An Old Housekeeper," at Fremont, O., contains the substance of most of these replies: "The difficulty in the way of always having good bread is not that 'the process is so varied or uncertain,' or 'requires such a degree of acquired mechanical skill,' but that bread making though simple, is a *long process*. Could it be made in an hour or two, like pies or cake, it surely should be always good. But in winter, it must be commenced by six in the evening, and is not completed often until noon of the next day; in summer, by nine in the evening, and (every wind being propitious) it is out of the oven by ten next morning. Now, from the time of setting the sponge until it is safely baked, it requires no small amount of care and watching. It must be placed in exactly the right temperature for the night. The *first thing* in the morning it must be molded. After that '*one eye*' must continually be upon it. It must neither be too cold or too hot, and when it has reached the exact point of lightness, it must be remoulded without delay. Next, the oven requires attention. That must be at the proper heat, and after the bread is in, it must not be forgotten until it is safely out."—Comparatively few housekeepers have so few other matters to look after that they can always take the requisite time to "see to the bread," hence, occasionally, a heavy, or sour, or burned loaf appears upon the table.

The above suggestions meet the case of many, and should lead the good man of the house either to provide more help, so that, as "Farmer's Daughter" suggests, one person may have time to give especial attention to the bread while in process of manufacture; or, if he can not afford this, should make him at least charitable enough to spare his wife's feelings when she is just ready to cry over her "bad luck."

There are, however, many inexperienced housekeepers who have never learned the process by which good bread can be made; and we presume it was for their benefit that our "Crusty Bachelor" started his question. Another correspondent, "Aunt Betsy" takes the same view of the case, and accordingly gives her method as follows: "I take 3 tablespoonfuls of flour and scald it with one pint of boiling water; let it remain until blood warm, and then stir into it one cup of good lively home-brewed yeast; cover it and set it in a warm place until it rises very light—from 3 to 5 hours. Then stir in flour enough to make a stiff dough, and knead thoroughly; cover, and let it stand until it rises. It must not be put in too warm a place—too much heat injures the bread—it needs about 65° Fahr. I make my sponge at noon and after tea make up the bread. Let it remain in a warm room over night, and in the morning it is risen sufficiently. I divide this dough into as many loaves as I wish to make, mould them into shape without kneading, set them in a warm place to rise and then bake."

A Maine "Farmer's Wife," gives the following directions for making yeast which she says she found in some newspaper, and which has proved to be excellent. Boil, say on Monday, 2 ounces of the best hops in 4 quarts of water for $\frac{3}{4}$ an hour, strain it and let the liquid cool down to about 90°. Then put in a handful of salt and half a pound of sugar, beat up one pound of the best flour with

some of the liquid, then mix well together. Two days after, add three pounds of potatoes boiled and well mashed. Let them stand together until next day, then strain, put into bottles and it is ready for use. It must be stirred frequently while it is making, and kept near the fire. Before using, shake the bottle well. It will keep in a cool place two months, and is best the latter part of the time. It ferments spontaneously, not requiring the aid of any other yeast, and if care be taken to let it ferment well in the earthen bowl in which it is made, it may be corked tight when first bottled.

Salt Emptyings.—Contributed to the *American Agriculturist* by Sarah D. Curtiss, Columbia Co., N. Y. To one pint of warm water add a teaspoonful of sugar, $\frac{1}{4}$ teaspoonful of salt, and butter the size of a walnut. Thicken them with flour—rye is the best. Set the dish containing the mixture in warm water. Stir the contents often during first three hours. Let it stand until light.

Economical Bread.—Contributed to the *American Agriculturist* by M. B. Stanley, near Westfield, Ind. Take scraps of flour bread, break in a pan or deep dish, cover it with milk, let it stand until soft, then mash. If very sour add half the amount of sweet milk, if not add sour milk; add $\frac{1}{2}$ teaspoonful of soda to the quart, two eggs and a little salt; stir in corn meal enough to make a batter; bake in a quick oven.

Bargains in Furniture—A Caution.

Many young housekeepers, and others who at this season are looking out for furniture, will naturally desire to "buy at a bargain." Opportunities for this are sometimes, but not often, found at auction sales. Second-hand articles usually bring their full value when eager purchasers are plenty; and when they are not, under-bidders (that is, persons employed by the owner to bid) are very frequently employed to keep the articles up to the mark. This latter practice is almost universal at the furniture auctions in this, and we presume, in other cities. The writer has seen the same articles sold day after day at auction rooms in New-York City.

A stranger in this city, or one not a stranger, but not of a suspicious nature, many easily be deceived by the auction sales of household furniture, which take place "on the premises." A house is hired by some party for a few weeks, furnished throughout with articles most likely to meet with a ready sale, and to comport with the general style of the house. Some houses are quite richly furnished, carpeted elegantly, the windows hung with rich appearing damask and lace curtains. Pier glasses, luxurious furniture, and *well-framed* pictures adorn the parlors. In the dining-room the extension-table displays upon immaculate linen a handsome dinner service, with full sets for each course; the side-board contains its furniture, and exhibits besides, breakfast and tea sets of china, with silver (?) urns and tea-pots, sugar-bowls, etc. The kitchen is completely furnished, too. So in the nursery; so in the chambers and the hall, every thing seems complete. Sometimes the nursery is half closed and, to make the deception the more perfect, a nice looking nurse with a child in her arms, or in a cradle, and with more or less child's fixins scattered about, may be seen doing the best she can to look quite at home. Let the visitor look about carefully at all and it will be observed that almost every thing is "bran new." The table-linen is of poor quality and not hemmed; the curtains are put up in the most temporary manner; the china has the *appearance* of elegance, but will not bear close inspection, for it is in reality of cheap quality; so with the showy, sham-substantial furniture; so with carpets (parlor, dining-room, and stair all of one pattern). So with every thing.

Watch the sale when it begins—nothing sells really cheap. The *bona fide* bidders stop, and then if there is likely to be a sacrifice on the article, persons employed by the auctioneer run it up or give it a closing bid, and it will be put up again as soon as the audience has changed a little.

It may be safely said that, on the whole, the best way to procure furniture, as well as other articles, is to go to some reliable dealer, pay a fair price and be content. The time and worry involved in hunting up cheap bargains, together with the probability of being humbugged first or last, are seldom offset by any real gain.

About Whitewashing.

The time for cleaning, and fixing up, has come, and one of the most important items is whitewashing. We often wonder that people do not do more at this. How much neater and more cheerful a whole place looks, if a few hours are spent in whitening the fences, the out-houses, the cellars, etc. It changes the whole appearance of the homestead. One day's work thus expended will often make a place twice as attractive and add hundreds of dollars to its salable valuation. Whitewashing a cellar with lime not only makes it lighter and neater, but more healthful also. *For Cellars*, a simple mixture of fresh-slacked lime is best. *For House Rooms*, the common "Paris White," to be bought cheaply, is very good. We take for each 2 lbs. of whitening, an ounce of the best white or transparent glue, cover it with cold water over night, and in the morning simmer it carefully without scorching, until dissolved. The Paris White is then put in hot water, and the dissolved glue stirred in, with hot water enough to fit it for applying to the walls and ceilings. This makes a very fine white, so firm that it will not rub off at all.—When common fresh-slacked lime is used, some recommend adding to each $2\frac{1}{2}$ gallons (a peckful), 2 tablespoonfuls of salt and $\frac{1}{2}$ pint of boiled linseed oil, stirred in well while the mixture is hot. This is recommended for out-door and in-door work.

For an Out-Door Whitewash, we have used the following with much satisfaction: Take a tub, put in a peck of lime and plenty of water to slack it. When hot with slacking, stir in thoroughly about $\frac{1}{2}$ pound of tallow or other grease, and mix it well in. Then add hot water enough for use. The compound will withstand rain for years.

What Makes Provisions Spoil?

As warm weather returns, the perplexities of the housekeeper are greatly increased by the difficulty of "keeping things sweet," as it is termed. Meat, bread, milk, preserves, in short, provisions of all kinds must be carefully looked after, or there will be sourness, taint, mould and other unpleasant phenomena in the cellar and pantry, and "these things are so provoking," that few housekeepers can always keep even their temper sweet under such difficulties. An understanding of the way in which these changes occur, the causes which produce them, and the circumstances which favor them, will aid in their prevention. Those who by long practical experience have learned to avoid the difficulty, may be interested to know *why* their methods are successful.

The staple articles of food most liable to be spoiled—meat, eggs, flour, milk, and their compounds—each contain a substance called *albumen*. The white of an egg is almost pure albumen. It forms about seven per cent. of the blood, and makes a part of all flesh and many of the juices or secretions of the body. A similar compound is found in vegetables and seeds. Albumen is made up of the elements carbon, oxygen, hydrogen and nitrogen, with a little sulphur and phosphorus. The muscular parts of fleshy fiber, called *fibrin*, and the albumen in the blood consist of the same elements as the albumen of the egg, except that they contain less of sulphur. Wheat flour contains a large portion of the substance called *gluten*, made up of the same constituents as fibrin. In milk there exists a compound named *casein* (the cheesy part) which is made of the same elements that constitute albumen, fibrin and gluten, though they are not present in exactly the same proportion. The different substances have a strong family resem-

bance both in their composition and their behavior. In each of them there is only a very slight attraction between some of their numerous elements. The element nitrogen, which enters largely into their composition, is especially fickle. A little too much warmth, or moisture, and it seems to become restless, and leaving its hold of the other elements, allows oxygen (which forms a large part of the surrounding air) to seize upon some of them and form an entirely new class of compounds. The carbon of the albumen uniting with the oxygen escapes in the form of carbonic acid; part of the nitrogen and hydrogen unite and give off the pungent ammonia; the sulphur makes an offensive, if not a defensive, alliance with another portion of the hydrogen, and flies away as sulphuretted hydrogen gas, one of the worst smelling gases known; and, by these and other combinations, the whole structure of the substance is changed; this is called *putrefaction*.

When once putrefaction has commenced in any part of a compound, it spreads with great rapidity. As in the working of social revolution, every individual atom seems excited with desire for change. The smallest portion of putrescent matter introduced into a mass containing the elements above named, will speedily lead to its complete disorganization. Evidently then, one of the first precautions suggested to the housekeeper is the necessity of entire cleanliness of all utensils and apparatus connected with provisions. The slightest taint in a barrel will communicate itself to the beef or pork which may be packed there. A little decomposing dough in the kneading trough will make mischief with bread; uncleanly milk pans will contain enough putrescent *casein* to set the whole contents into active decomposition, and thus with other articles. Hot water, soap, and the scrubbing brush are the efficient guards against insidious attacks of the destructive agent, and these should be constantly on duty where there is exposure to danger. Other interesting facts connected with the preservation of eatables will be presented when space allows. *

Spinach at Home and Elsewhere.

Herbert says: "When I get spinach at a restaurant or hotel I have a most delicious vegetable, but at home, Bridget gives us only a dish of greens; what makes the difference?" The difference here as in many other things lies in the cooking. Spinach is sometimes utterly spoiled by cooking with meat or with other vegetables. At other times it is simply boiled and skimmed out of the water and sent to the table without other preparation. To have spinach nice; wash and pick it over and then throw into *boiling* water and let cook until done, drain on a colander and chop fine. Then put in a saucepan a lump of butter as large as an egg for each quart of chopped spinach, and when melted, put in the spinach, let it simmer until thoroughly heated through, and serve with slices of hard boiled egg laid over it. Some vary the dish by adding a little flour and milk at the last cooking; some chop the spinach before boiling and proceed as above.

Hints on Cooking, etc.

Plain Indian Pudding.—Contributed to the *American Agriculturist* by Frances W. B. Robbins, Suffolk Co., N.Y. Place 2 quarts of milk in a vessel over the fire; into this stir slowly a cup of Indian meal, one cup of molasses, and butter the size of an egg. As soon as it boils pour the whole into a baking pan. When cold add two eggs, well beaten, and bake two hours.

Rusk.—Contributed to the *Agriculturist*, by Mrs. David Brush, Queens Co., N.Y. To 1 pint of milk add 1½ teacups of sugar, 1 egg, a lump of butter the size of an egg, and stir in flour enough to make it a little thicker than cream. Set the sponge over night, mix it up in the morning. Mould into biscuits immediately after mixing, and place in the pan for baking. Let them stand in a warm place until their size is doubled. Bake in a

moderate oven half an hour. Immediately after taking from the oven wash their tops with molasses and water.

Corn Cake.—Contributed to the *American Agriculturist* by Miss L. E. Hewins, Norfolk Co., Mass.: "To 2 cups of Indian meal add 1 cup of flour, 2 eggs, 1 teaspoonful each of *saleratus* and cream of tartar, ½ cup of sugar, salt to the taste; mix with new milk quite thin (so it will pour easily), and bake it well in a quick oven."

Fruit Cake.—Mix 1½ lbs. bread dough, ½ lb. sugar, ½ lb. butter, 4 eggs, 1 lb. raisins, 1 lb. of currants and spice to the taste.

Fancy Crullers.—Mix 4 eggs, ½ lb. of sugar, ½ lb. of butter, 1 teacupful of sweet milk, 1 teaspoonful of soda, and two of cream of tartar, the last two dissolved separately in as little water as possible; add sufficient flour to roll well. Shape by tying two knots and putting the ends through.

BOYS & GIRLS' COLUMNS.

A Garden for Every Child.

One of the most attractive gardens the writer has ever seen, is in a narrow crowded street in New-York City, where the land is worth more than a dollar a square foot, and buildings are packed together as closely as it is possible to place them. As there is not space for wide houses, most of them have been run up four, five or six stories high, and every room is occupied with goods for sale, or machinery and workmen, and here and there, clear up in the topmost story, live a family of poor people. The garden we have in mind, belongs to such a family. "Do they make it in the yard?" asks some little girl who has never visited the City. "No, there are no yards there. The houses occupy all the ground except the street, and that is covered with paving stones so thickly that you could not grow a radish between them. "Where then can this wonderful garden be?"—It is on the window-sill in the highest story of a house, in front of a room occupied by a poor woman and her three little girls. It is only three feet long, and about one foot wide, made in a box filled with earth and fastened to its place in the window in summer, but carried within during winter. From it grow two Morning Glory vines which twine around the window frame; a monily rose blooms in the center, and a Geranium and a Mountain Daisy complete the garden. "Why that is not much!" says some young reader. Perhaps not to you, nor to the thousands of people that pass that way every day without even caring to glance at it, but to those three little girls it brings more pleasure than many a rich man enjoys from extensive grounds and costly green-houses. They cultivate the flowers themselves. They know every bud and leaf and blossom; they have watched them day by day, welcoming each tiny shoot as it peeped forth from the parent stem, petting each bud as though it could understand their prattle, and a joy has sprung from every flower to nestle in their own hearts. These children are gentler, kindlier and more loving, for their care of their little garden—can you wonder that we say it is most attractive? Is it not a beautiful thing?

Now who can not have as large a garden as this, and find it as great a source of happiness? Most of the girls and boys of the *American Agriculturist* family live where there is room for them to plant and train many flowers, and even fruits, and vegetables. Begin the work this spring. Do not undertake too much, ask for the use of only so much ground as you can attend to well; learn, by watching others, by reading, and by inquiring what and how to plant and cultivate; and before the summer is over you will find more pleasure than a whole candy shop or a toy store could give, even if it were all your own.

A Curious Animal—Trumpet Rat.

A scientific Frenchman was one day greatly surprised at the appearance of a strange looking animal in the possession of a soldier. It looked like a rat, but had a long proboscis or trunk, shaped like a small trumpet, growing from the end of its nose. The gentleman immediately purchased it at a high price, and his scientific friends to whom he showed it were entirely at a loss to what species it belonged. The animal was a male, and the gentleman anxiously desired a female also, that he might breed them, and after some trouble he procured one from the same soldier. In due time a litter was produced, but they proved to be nothing more than common rats. Upon inquiry, it turned out that the soldiers had amused themselves by grafting the tail of one rat into the nose of another, and confining them until the parts had grown together, after which the trumpet was cut off from its original owner, and left as an appendage to puzzle the learned. (?)

Curious Arrangement of Figures.

A correspondent at Marion, O., asks the arithmetical readers of the *American Agriculturist* to explain the principle or reason for the following results: Multiply 12,345,678 by each of the following numbers: 63-27-54-18-36-45-9-91 and 72; then add the products of multiplication, then add 5. Now if one figure be dropped, the remainder will be nothing. This, however, is the least curious part of the result. Each product will consist of the repetition of a single figure, and that figure will be greater by one than the tens figure of the multiplier. Again, the figures of each product added together will give the multiplier. And still further, when the products are arranged in columns for addition, the sum of each single column will be the same, and will equal the sum when the figures are added diagonally.

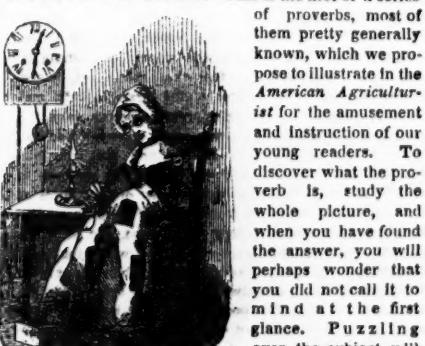
Answers to Problems and Puzzles.

The following are the answers to the Puzzles Nos. 72, 73, 74, 75, and 76 in March No., page 87.—No. 72, Mathematical Problem.—Length of the smaller circular track, 21,416 ft.; of the larger, 62,832 ft.—No. 73, Fig. 1. A coxcomb is a vain (vain) man.—No. 74, Fig. 2. Soldiers are pleased with a fur low (furlough).—No. 75, Fig. 3. The prickly pair (pear) is abundant at the South and West.—No. 76. Illustrated Rebus.—Bear miss four tune with forty two d—or Bear misfortune with fortitude. The following have sent correct answers to March 5th: John Cotton 76; J. Rogers, 66; Bertha De Verry, 67; "U" 71; Walter M. Belden, 66, 69; Justin Britton, 66; Enoch Hayes, 66; Fred. J. Newman, 66; G. A. Penniman, 66, 68, 71; E. N. Jones, 66; Frank Ferris, 66; Reader at Assumption, III., 66, (why did you not sign your name?); C. W. McComb, 66; Wm. C. Johnson, 64, 66, 69; "B. K. N." 66, 69; Pulver Husted, 66; David K. Merriman, Jr., 70; Wm. H. Hollister, Jr., 66; A. L. Green, 66; Leslie S. Fields, 66; George Almon Giddings, 66; Wm. L. F. Fox, 66; David Edwards, 69; Ermon A. Hull, 64, 69; Hattie E. Turner, 66; Ellen Taber, 66; Geo. W. Morse, 66; Robert Markwick, 66, 68; "H. S. W." 64, 66; John F. Holmes, 66; "Hans," 69; H. H. Rudolph, 66, 71; J. N. Insley, 66; Louis H. Jackson, 66; John A. English, 66; Dora and Ada, 66; W. Wetmore, 66; George M. Gould, 66; A. F. Bradley, 66; Fannie J. Minor, 66; Reader at Palmyra (no name) 66, 69; G. H. Hays, 66, 69; Richard H. Wilson, 66, 69; S. P. Bosley, 66, 69; D. H. Trently, 62, 63, 64, 66; "Subscriber," 70; H. H. Osgood, 66, 69; J. Wittmer, 66; G. Wachter, 66.

New Puzzles to be Answered.



No. 77. Illustrated Rebus.—Good advice for all.
No. 78. Pictorial Proverb.—This is the first of a series



of proverbs, most of them pretty generally known, which we propose to illustrate in the *American Agriculturist* for the amusement and instruction of our young readers. To discover what the proverb is, study the whole picture, and when you have found the answer, you will perhaps wonder that you did not call it to mind at the first glance. Puzzling over the subject will

not only quicken and strengthen the observing powers, but will help to fasten the truth contained in the proverb.

No. 79. The Puzzling Dots.—Draw a figure similar to this one, on a slate. You

notice that there are four dots in each square, and three squares on each side, making twelve dots on a side. The puzzle is to rub out eight of these dots, and then replace only four of them in some of the squares, so that they shall still count twelve on a side, although four of the whole number have been removed. Please try it, and explain how it can be done.

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STRAYED AWAY FROM HOME.—Engraved for the American Agriculturist.

What May be Seen in the Picture.

A little girl lost in the woods! No wonder the kind lady and gentleman who happened to pass that way are interested. Every girl and boy who looks at the beautiful picture feels sympathy for the sweet little child who has strayed away from home, with her pet kitten in her arms. Her face plainly tells us that she knows something is wrong; she does not fully feel that she is lost, or she would be crying. She is shy of the stranger lady, and there is also something in her expression which says, "I know I was naughty to go away when mamma told me not to leave the door-yard."—How much the artist has told in this simple and touching sketch. As we look at it we cannot help thinking of the tens of thousands of our young readers who are in danger of sometimes forgetting that father and mother know best, and of being beguiled away like this little child, into ways that will at last bring them trouble and sorrow. She cannot realize that the sun will not always shine so bright, nor the flowers look so beautiful, nor every thing be so pleasant around her. She thinks not of night and cold and hunger that must come soon, if she be not restored to her home, any more than that wilful boy can now see that playing truant from school, disobeying his parents, or indulging in wrong pleasures of any kind, will end in sadness and, it may be, in ruin. The thoughtless girl who is not content with the simple enjoyments of home, but who, in spite of the warnings and entreaties of her mother, persists in joining the follies of her gay companions "because she can't see any harm in it," should study this picture, and remember that there are evils which older persons can see, from which they would save her by their counsel.—We have another beautiful picture, already engraved for the next month, showing what afterward happened to this same little lost one.

AN INGENIOUS JUDGE.—Three brothers were heirs to their father's oxen, seventeen in number. By the Mahomedan law of inheritance, the eldest brother was en-

titled to one half, the second one to one-third, and the youngest to one-ninth of the whole number. As the animals could not be divided without destroying them, the subject was referred to the commander of the faithful, Ali. The caliph added an ox to the number, and then made the division. This gave each brother more than his share—the eldest nine, the next six, and the youngest two—and still left to the prince the ox which he had added.

The Sanitary Commission and the Scotch Woman.

The following touching incident illustrates the kind of work which is being accomplished by the noble Sanitary Commission. A Scotch woman, after nursing her wounded son until he was almost well, found her money so nearly gone that she could not remain with him; yet she could not bear to leave him dependent only upon the ordinary hospital supplies, lest as she said "he shouldn't be so well." A kind friend took her to a storehouse to procure a few luxuries for her boy. He ordered a supply of sugar, tea, soft crackers and canned fruit, then chicken and oysters, then jelly and wine, brandy, milk, and underclothing, until the basket was full. As the earlier articles nestled under its lids, her face was glowing with satisfaction; but as the later lots were being added, she would draw him aside to whisper "It was too much,"—"really she hadn't enough money;" and when the more expensive items came from the shelves, the shadow of earnestness which gloomed her countenance grew into one of perplexity, her soul vibrating between motherly yearning for the lad on his bed and the scant purse in her pocket, until, slowly, and with great reluctance, she began to return the costliest. "Hadn't you better ask the price?" said her guide.—"How much is it?"—"Nothing," replied the storekeeper.—"Sis!" queried she, in the utmost amazement, "nothing for all this?"—"My good woman," asked the guide, "have you a soldiers' aid society in your neighborhood?"—"Yes, they had; she belonged to it

herself.—"Well, what do you suppose becomes of the garments you make, and the fruit you put up?" She hadn't thought,—she supposed they went to the army,—but was evidently bothered to know what connection there could be between their aid society and the basket. "These garments that you see come from your society, or other societies just like yours: so did these boxes and barrels; that milk came from New-York; those fruits from Boston; that wine was likely purchased with gold from California; and it is all for sick soldiers, your son as much as for any one else. *This is the kind of work done by the United States Sanitary Commission.*"

Eccentric Fowls—Habits of Animals.

A young reader of the *American Agriculturist*, Wm. Millard, Fairfield Co., Conn., who evidently knows how to use his eyes and ears, describes the peculiar ways of some of his fowls. One of his roosters is a most attentive gallant. He not only scratches about to find choice morsels for the hens of his family after the manner of common roosters, but busies himself in making nests for the hens, and when one of them tells the world what a fine egg she has laid, he never fails to cackle also with all his might, probably by way of compliment for her praiseworthy performance. Our young friend has named one of his pullets "the barber," because on rainy days she devotes herself to arranging and dressing the top-knots of her companions. She is also a very ambitious character, and sometimes leads the flock around with all the strutting and peculiar airs of a male bird. Not long since, while parading in this manner, she completed the performance by trying to crow, when she made such a frightful noise that her companions fled in dismay. Our young friends may find much amusement and instruction in observing the peculiarities of the various inhabitants of the farm-yard. Each animal will be found to have its own individual character more or less strongly marked. Every farmer knows that some cows are better mothers than others; that some sheep are naturally wild and restless, always leading the flock into mischief; others quiet and orderly; and so with every brute creature. One who makes animals a study will soon learn how to control them for his own use. This is seen in the mastery of the horse, gained by Rarey and others, and also in the wonderful power which trainers of wild animals possess.

A Remarkable Dog.

Many years ago a jeweller in New-York City employed one of his clerks to sleep in the store to protect it from burglars. He was usually armed with pistol, but one night for some reason this had been left at his home, and on this very night he was awakened by the noise of some one at work at one of the rear shutters. He walked noiselessly to the place, and discovered that a burglar was sawing out a hole through which he might put his hand, and draw the bolt that held the shutter. Although alarmed, he did not lose his presence of mind, but carefully lifted the window next to the shutters. He then commenced to growl in imitation of a dog, and let off a series of loud and furious barks, "Confound the brute," exclaimed a voice outside. "No matter," said another voice, "go ahead, we can soon fix him." The clerk continued his barking, but this did not stop the burglars. Just as the hole was completed, and a hand was being thrust through, he luckily noticed a large pair of pincers near, which he grasped, and as the hand fully appeared he gave it a tremendous nip and held it fast, all the while growling and whining frantically. "Oh! oh! he's fastened me," shrieked the burglar, struggling to get loose. But the clerk held on with the pincers, and just then a watchman in the street came in sight, the burglar's companion ran, and he himself was quickly discovered and secured. The clerk's ingenuity thus saved his master's goods, perhaps his own life, and secured to himself a handsome reward from the owner of the store.

Two Rogues Instead of One.

An amusing incident is related of a woman in England whose husband, a wealthy man, died suddenly without leaving any will. The widow, desirous of securing the whole property, concealed her husband's death, and persuaded a poor shoemaker to take his place while a will could be made. Accordingly he was closely muffled up in bed as if very sick, and a lawyer was called to write the will. The shoemaker in a feeble voice bequeathed half of all the property to the widow. "What shall be done with the remainder?" asked the lawyer. "The remainder," replied he, "I give and bequeath to the poor little shoemaker across the street, who has always been a good neighbor and a deserving man"; thus securing a rich bequest for himself! The widow was thunderstruck with the man's audacious cunning, but did not dare expose the fraud; and so two rogues shared the estate.

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See pages 71 and 93 March *Agriculturist*.WM. H. MORRIS, Wholesale Agent,
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I have a large stock of Dwarf Pear and Standard Apple trees, of superior quality, and the most desirable market varieties, with a general assortment of other trees and plants, at reasonable prices. T. G. YEOMANS, Walworth, Wayne Co., N. Y.

TO FARMERS, DEALERS and NURSERYMEN. Early Harvest, Northern Spy, Baldwin, and other leading varieties of Apple Trees at the Onondaga Nurseries. They are of large size and fine shape, and will be sold *very cheap indeed*. Address G. B. SEELY, Syracuse, N. Y.

PLUM TREES.—OVER 100 KINDS.—Splendid Trees—on Plum Stock—low in quantity. PRINCE & CO., Flushing, N. Y.

White Willow.

I will box securely, pure cuttings of the above, and ship to any address at \$8 per thousand. I will sell as good an article, and the same willow, at the above price, as can be obtained for more money. Address J. H. GRAVES, Dement, Ogle Co., Ill.

Adirondac Grape for Sale.

2 years old, very strong, No. 1.....	\$5.00
2 do. strong, No. 2.....	4.00
1 do. very strong, No. 1.....	3.00
1 do. strong, No. 2.....	2.00

All cut back to 3 to 4 eyes.

A discount of 10 per cent to dealers on bills of \$50 and over. The above prices and terms of discount will be strictly adhered to.

No INFERIOR vines will be sent out by me. Purchasers can rely on the quality of my vines being unsurpassed.

Will be forwarded in sealed boxes by Express. No charge for boxes. Or small orders will be securely packed and sent by mail, prepaid, when so ordered.

The two great Grape Exhibitions held last autumn at New York and Cleveland, awarded to the Adirondac THE PRIZE FOIL THE

**BEST NATIVE GRAPE OF ANY KIND,
QUALITY TO RULE.**

The discovery and introduction of the Adirondac Grape is an event of the highest importance to fruit growers, and the greatest advance yet attained by native grapes. Its peculiarities are extreme earliness, large berries and clusters, tender and thin skin, melting without any perceptible pulp, and of the most delicious and delicate flavor, reminding one of that splendid but hot-house grape, the "Black Hamburg." Address JOHN W. BAILEY, Plattsburgh, Clinton Co., N. Y.

**IONA VINES and WOOD
for Propagation, etc.**

Delaware Wood for propagation, at from five to twenty dollars per thousand eyes, according to quality, ranging from good to best. Also Diana Wood as above. Strawberry Plants of the two best varieties in cultivation, \$1 a hundred by Mail; \$5 per thousand by Express.

GOLDEN ARBOR VITE.

Very beautiful plants—the best that I have ever seen, per dozen according to size, \$5, \$12, and \$18; per hundred \$28, \$50, and \$100.

For contents of Descriptive Catalogue of vines, see advertisement in March No. of *Agriculturist*.

Iona, near Peekskill, Westchester Co., N. Y.

C. W. GRANT.

Adirondac Grape Vines.

For sale by the single one or hundred, and every plant WARRANTED GENUINE.

Circulars sent free. Single vines sent by mail, postage paid.

Price 1 year old \$2. 1 year old EXTRA \$3.

" 2 years " \$4. " 2 years " " \$5.

Fine plants Iona, Isabella, Allen's Hybrid, Delaware, &c., &c., &c. Address J. W. CONE, Norfolk, Ct.

At wholesale and retail. All the New and Valuable Varieties, warranted genuine. Descriptive Catalogue and Price List, Illustrated with twenty fine engravings, drawn from life, sent for ten cents.

R. W. HOLTON Agt., 32 John-st., N. Y.

Dr. C. W. Grant's Grape Vines

At wholesale and retail. All the New and Valuable Varieties, warranted genuine. Descriptive Catalogue and Price List, Illustrated with twenty fine engravings, drawn from life, sent for ten cents.

R. W. HOLTON Agt., 32 John-st., N. Y.

THE FRAMINGHAM GRAPE.

HOVEY & CO.,

23 Kilby Street, Boston,

HAVE THE PLEASURE OF INTRODUCING TO CULTIVATORS A

VALUABLE NEW HARDY GRAPE.

Called the Framingham, raised by Mr. J. G. Morneberg, of Springfield, Mass., and cultivated by Mr. O. Bennett of Framingham, also exhibited splendid specimens before the Massachusetts Horticultural Society, in September last, which attracted much attention.

The Framingham is a superior grape, as early as the Hartford Prolific, which was shown at the same time, and with bunches as large and handsome as the Isabella, which it resembles in appearance and quality, having the same brisk vinous flavor. The vine is a remarkably strong and vigorous grower, with large, thick foliage, resisting the attacks of mildew; and for earliness, productiveness, and hardiness may be safely pronounced a valuable addition to our native grapes.—Mr. Bennett having raised a small stock of vines he has placed them in our hands for sale, at the following prices:

3 year old vines, very strong, \$2 each, \$18 per dozen.

2 year old vines, very strong, \$1.50 each, \$12 per dozen.

Vines safely packed and forwarded to all parts of the country.

GRAPES. GRAPES.

200 varieties Native.—100 varieties Foreign, at very low rates. Send for price list and see low prices per 100 in March of *Agriculturist*.

PHINCE & CO., Flushing, N. Y.

50,000 CRANBERRY PLANTS for sale by GEO. A. BATES, Bellington, Mass.

Send for Circular on the Cranberry and its Culture.

NANSEMOND SWEET POTATO PLANTS.

Of best quality, during May and June. Put up to carry safely long distances. Price, 200 \$1; 1,000 \$2.50; 5,000 \$11; 10,000 \$30. This variety is hardy and prolific, being profitably grown 44 degrees north. Send for our circular, containing instructions in cultivation and experience of those growing them. Address MURRAY & CO., Foster's Crossings, Warren Co., Ohio.

Sweet Potato Plants.

IMPROVED NANSEMOND ready in season, May and June. Orders should be in by first of April. Price \$3 per 1000, packed and sent as directed. When boxed and sent by mail, 80 cents per 100. J. C. THOMPSON, Tompkinsville, Staten Island, N. Y.

ALSIKE OR SWEDISH CLOVER.

Prime new Seed, 75 cents per pound, 8 cents per pound additional, if ordered to go by mail.

Send for our Catalogues of Vegetable, Flower and Tree Seeds. J. M. THORNBURN & CO., Seed Warehouse, 15 John-st., New-York.

EVERGREENS.—JOHN W. ADAMS, Portland, Me., will supply—if ordered early—at former rates.

New Varieties of Strawberries.

PROGRESS, a new seedling of great promise, berries of the largest size, high flavored, and wonderfully prolific. Plants, \$2.00 per doz.

RUSSELL'S PROLIFIC.—This is believed to be the largest and best strawberry ever introduced, berries over 6 inches in circumference, and more productive than the Wilson. Plants, \$1.00 per doz, or \$5.00 per hundred.

The following four varieties are white berries, and eminently valuable, fruit of the largest size, plants perfectly hardy, and very productive; Lening White, White Pineapple, Albion, Depthfield White; Plants, \$1. per dozen; the four varieties \$5, or \$5 per hundred.

EMPEROR EUGENIE, Marguerite, Princess Frederick William, United Victoria, and St. Lucia Island, 75c. per doz. Empress Eugenie and Marguerite have taken many prizes, they are of enormous size and fine flavored. Oscar Wonderful, Bonita St. Julian, Boyden's Mammoth, Due de Malakoff, and Wizard of the North; at 50c. per doz.

LA CONSTANTE, 75c. per doz, or \$4. per hundred. Triomph de Gandy, Wilson, Austin, Downer's Prolific, \$1. per hundred, or \$6. per thousand. All orders addressed to

WM. S. CARPENTER,
329 Greenwich street, N. Y.

Russell's Strawberry.

Russell's Strawberry.

Russell's Great Prolific.

Russell's Great Prolific.

The best, largest, and most prolific Strawberry known, measuring 5 to 6 inches in circumference. Plants of this New Strawberry ready in April, \$2 per doz, \$10 per 100. Cash to accompany orders. Also Grape Vines, Fruit, and Ornamental Trees, etc. Address W. T. & E. SMITH, Geneva Nursery, Geneva, N. Y.

Strawberry Plants

Of best quality of all the leading varieties, for Spring planting at reduced prices. Wholesale and retail. Order early. New price list ready. E. WILLIAMS, Mont Clair, N. J.

La Constante Strawberry.

The largest, handsomest and best of all Foreign Strawberries, hardy, productive, and of superior quality. Plants, 75 cts. per doz., \$3 per 100. Also, Emma, Empress Eugenie, Nap. III., Marguerite, and others, \$1 per doz. Hovey's Seedling and Boston Pine (genuine plants), \$1 per 100. Address HOVEY & CO., Boston, Mass.

Russell's Prolific Strawberry.

Visitors to the *Agriculturist* office will remember the Splendid Show of this unequalled Fruit by me last season. Having a fine stock, I offer first quality plants at \$1 per doz., \$5 per 100. Also, Triomph de Gandy at 35c. per doz., \$1 per 100, \$6 per 1000. Use per doz. extra by mail.

EDWIN MARSHALL, Poughkeepsie, N. Y.

STRAWBERRY PLANTS.—Austin, Bartlett, Brighton Pine, Cutler, Downer, Fillmore, Hooker, Triomph de Gandy, Russell's, Victoria, Ward's, Wilson, etc. In large or small quantities.

Currants.—Cherry, White Grape, Red and White Dutch. **Grapes.**—Clinton, Concord, Hartford Prolific, Diana, Delaware, etc. Address E. WILLIAMS, Mont Clair, N. J.

RUSSELL'S GREAT PROLIFIC STRAWBERRY.—undoubtedly the best strawberry yet known. Good healthy plants by mail post-paid \$1 per dozen. By express \$3 per dozen.

Also by express, Wilson's Albany \$5 per 1000, Hudson River Antwerp, \$4 per 100. Cash to accompany orders. O. J. TILLISON, New Paltz Landing, N. Y.

NEW STRAWBERRIES, &c.

All persons wanting the **Newest and Best** varieties of Small Fruits are requested to send for the Price List of the Poughkeepsie Small-Fruit Nursery.

EDWIN MARSHALL, Poughkeepsie, N. Y.

NEW FRUITS.

RUSSELL'S PROLIFIC STRAWBERRY, undoubtedly the best variety now extant. Strong plants by mail post-paid \$1.50 per dozen. By express \$3 per dozen.

GREEN PROLIFIC STRAWBERRY produced by Seth Bodine, Esq., and second to none, except perhaps Russell's, and in many respects equal to the famous variety. Plants by mail \$1 per dozen—By express \$3 per dozen.

LINDSEY'S FAST-FOOT SEEDLING RASPBERRY. Produced by Jas. B. Lindsey, Esq., of Orange, N. J., and being PERFECTLY HARDY will undoubtedly prove the best variety yet introduced. Strong canes by mail \$3 per dozen.

BIGGAREAU DOULIN CHERRY.—A French variety of recent introduction, a very valuable acquisition, being large, fine flavored, productive and early, ripening middle of June. Strong trees, one year from bud, 6 to 8 feet, 75 cents each, packing included, or 50 cents each when ordered with other trees.

Circulars descriptive of all the above, and general catalogue of Seeds, Trees, Bulbs, &c., mailed free to all applicants.

FRANCIS BRILL, Nurseryman and Seedgrower,

Newark, New-Jersey.

50,000 Myatt's Wine Plant.
(The Genuine Linnaeus Rhubarb.)

For Sale by

KING & MURRAY,

Flushing, L. I., near New-York.

They also offer for Sale every variety of

Fruit and Ornamental Trees.

Evergreens and Shrubs.

Grapes and Small Fruits, &c.

They would call particular attention to their stock of **STANDARD PEARS**, which is very fine.

Choice Seed.

Among the new, rare or very desirable vegetables for 1864, I would invite particular attention to the following. Yokohama Sesame (new, from Japan), White Japanese Melon, Ward's Nectar Melon (most excellent, very prolific), Marblehead Mammoth Drumhead Cabbage (the largest cabbage in the world), Turban Squash (best of all Fall squashes), Early Paris Cauliflower (very early and very reliable), Pierce's Cauliflower (the standard late in Boston market), Waites' New Alma Cauliflower (this is a famous new English variety). Each of the above 25 cts. per package, and eight for \$1.75. Forty days corn (two weeks earlier than any standard sort), Mexican Sweet Corn (the best of all corn), Speckled Lima Bean (a choice, new sort), French's Imperial Cabbage Lettuce (one of the best of all Cabbages), Boston Curled Lettuce (most elegant of all, excellent), Concord Bean (new, most elegant, very descriptive), California Bean (new, large, prolific), Large Persian Musk Melon (fine, large variety), Chinese Rose Winter Radish (seedsmen consider this quite an acquisition), Fejee Turnip (the earliest and hardiest of all Beans), Butter Bean (excepting the Lima, this is the best of all green shell beans), Indian Chief Bean (the best string bean), New-Jersey Hybrid Cucumber (an extra large white spined variety), Scarlet Chinese Egg Plant (an elegant ornamental), Lester's Perfected Tomato (every larger and more upright Tomato to the new French Tomato). Extra Early York Tomato (very early, prolific, of good market size), Ornamental Gourds (many varieties in a single package), Hubbard Squash (seed very pure), Tom Thumb Pea (very early, grows 10 inches high, yields finely), Boston Market Celery (the best celery raised), Golden Sweet Corn (a sweet table corn of bright golden color), Sorghum Seed (pure imported seed), Brills' Extra Large Purple Egg Plant, Mammoth Chihuahua Tomato (sometimes weighs 2½ lbs.). Each of the above at 15 cts. per package, the 25 varieties for \$3.00.—My Annual Circular, now ready, contains further descriptions of each of the above, and a list of over 200 varieties of choice, reliable Garden Seed, many of which are in my own raising. Sent gratis to all. As the original introduction of the Hubbard Squash, Marblehead Mammoth Cabbage, and other choice vegetables, I invite the patronage of the public.

JAMES J. H. GREGORY, Marblehead, Mass.

Vick's Illustrated Catalogue of Seeds, and**Guide to the Flower Garden for 1864.**

MY NEW CATALOGUE AND FLORAL GUIDE is now published and ready to send out. It contains accurate descriptions of the leading floral treasures of the world, with full and plain directions for SOWING SEED, TRANSPLANTING and GENERAL CULTURE. Also a list of Choice Seeds for the **VEGETABLE GARDEN**, with necessary instructions for PLANTING and CULTURE.

My NEW CATALOGUE and FLORAL GUIDE is a beautiful work of FIFTY large pages, illustrated with TWENTY-FIVE fine engravings and one splendid COLORED PLATE of the DOUBLE ZINNIA. It will be sent, postage paid, to all who apply inclosing ten cents.

Address JAMES VICK, Rochester, N. Y.

Catalogues Gratis.

I will mail free to all applicants my Catalogues of Bulbs, Seeds, Trees, Vines, Shrubs, Strawberries &c.

Also descriptive circulars of the GREEN PROLIFIC STRAWBERRY, produced by Seth Boyd, Esq., and the great RASPBERRY, LINDSEY'S FASTOLF SEEDLING, PERFECTLY HARDY, raised by Joseph B. Lindley, Esq., of Orange, N. J., and placed in my hands for distribution. Address FRANCIS BRILL, Nurseryman and Seedgrower, Newark, New-Jersey.

FLOWER SEEDS BY MAIL**POST-PAID.**

The following collections have been formerly known in every section of the country for the past ten years. Those who have tested them recommended them freely to their friends, and the most satisfactory reports are daily received of their good quality. They are all of our own selection, and contain none but the most desirable varieties of the earliest culture.

No. 1.—Contains twenty choice varieties of Annuals, \$1.00

No. 2. " " " Biennials and Perennials, 1.00

No. 3.—Contains ten extra fine varieties of Annuals and Perennials, embracing many of the new and choicest in cultivation, 1.00

No. 4.—Contains five very choice varieties selected from Prize Flowers of English Pansies, German Carnations and Picotee Pinks, Verbenas, Truffaut's French Aster, Double Hollyhocks, 1.00

Any one remitting \$3.00 will receive the four assortments, postage free.

The following additional assortments will also be sent at the price annexed, free of postage.

No. 5.—Contains fifteen very select varieties of Greenhouse Seeds, 3.00

No. 6.—Contains one hundred varieties of Annuals, Biennials, and Perennials, including many new and choice varieties, 5.00

No. 7.—Contains fifty varieties of Annuals, Biennials, and Perennials, 2.50

No. 8.—Contains twenty varieties of hardy Annuals, Biennials, and Perennials, for sowing in the autumn, 1.00

All orders to be accompanied with the Cash. A descriptive Cultural Catalogue mailed to all applicants enclosing two three-cent stamps.

Please address B. K. BLISS, Springfield, Mass.

BRIDGEMAN'S DESCRIPTIVE CATALOGUE

OF

BEDDING PLANTS,

Embracing many NEW and BEAUTIFUL

Varieties, as well as a

SELECT LIST OF ROSES.

Now ready for Distribution.

ANDREW BRIDGEMAN
878 Broadway, New-York.**SEEDS. SEEDS.**

We call the attention of Farmers, Gardeners and Dealers, to the Stock of Seeds we have now in store, the quality of which is superior to any we have heretofore been able to offer. In it is embraced all the **Valuable New Seeds** and the most approved sorts of former introductions, both of American and Foreign Growth, which can be relied upon for freshness and purity.

GARDEN SEEDS.

Peas, Beans, Beet, Broccoli, Cabbage, Cauliflower, Celery, Cucumber, Egg Plant, Endive, Kale, Leek, Lettuce, Melon, Okra, Onion, Parsley, Parsnip, Pumpkin, Radish, Spinach, Squash, Tomato, and Turnip Seeds of all varieties.

FIELD SEEDS.

Spring Wheat, Barley, Oats, Buckwheat, and Rye, Large and Small Millet, Flax, Cotton, Vetches, Tobacco, Spurred, Sainfoin, Broom Corn, Chicory, &c., &c. Red and White Clover, Lucerne, Timothy, Red Top, Fowl Meadow, Rye Grass, Blue Grass, Orchard Grass, and Mixed Lawn Grass.

HERB SEEDS.

Herb Seeds of all kinds.

Garden and Field Corn

in great variety.

FRUIT SEEDS.

Apple, Pear, Quince, Cherry, Currant, Strawberry, Plum, Apricot and Peach.

Forest and Ornamental Tree Seeds.

FLOWER SEEDS OF ALL STANDARD VARIETIES.

Bird Seeds.—Canary, Hemp, Rape, Maw, Rough Rice, &c.

All valuable Books on Agriculture, Horticulture and Farm Tools.

R. H. ALLEN & CO.,
189, 191 & 193 Water-St., New-York.**COLLECTIONS OF KITCHEN GARDEN****SEEDS.****BY MAIL, POST-PAID.**

Twenty varieties, our selection, \$1.00

Forty-five varieties, \$2.00

These collections embrace all the leading varieties of Vegetable Seeds usually grown in our gardens. To those who desire larger quantities, we would recommend our collections at \$30.00, or \$15.00, or \$10.00, or \$5.00 and \$3.00, suitable for large or small gardens, which can be safely forwarded by express to all parts of the world. A list of the contents of each collection will be found in our NEW DESCRIPTIVE CULTURAL CATALOGUE, which will be sent to all applicants upon receipt of two three-cent stamps. Address, B. K. BLISS, Springfield, Mass.

Cane Seed! Cane Seed!

Sorgo, Oom-see-a-na, Nee-a-za-na (or White Imphee), and Otaheitean Cane Seeds, selected with the greatest care, unaffected by frost and reliably pure, for sale by

BLYMYER, BATES & DAY,
Mansfield, Ohio.**THE NEW SQUASH!****The Turban or Turk's Head Squash.**

Since I introduced the Hubbard as the best of all **Winter** squashes, I have been seeking for the public a first class **Turban** or **Orange** squash, of the size and weight of the Hubbard, testing many new varieties. I am satisfied that the Turban is decidedly the best of all squashes for Fall use. It is very dry, very fine grained and rich flavored, (the Hubbard has little, or no flavor in the Fall), and is the thickest meated and heaviest in proportion to its size of all squashes. It grows to a good size for family use, yields well, and is most excellent either for the table or for pies. In competition with all other varieties my Turban received the prize for quality next to the Hubbard at the late great exhibition at the rooms of the American Agriculturalist.—Recommendations from Seedsmen, Editors of agricultural papers, Provision Dealers and Farmers, and a description of the squash will be found in my Circular, which I shall forward gratis, to all my former customers; hence they need not write me for it. To all others it will be sent gratis on application.

Price per package of 50 seed—25 cts.; five packages for \$1. JAMES J. H. GREGORY, Marblehead, Mass.

Flower Seeds, Delaware Grape

VINES, flowering plants, &c., in variety. Sent by mail. Catalogues gratis. Address H. B. LUM, Sandusky, Ohio.

Goodrich's Seedling Potatoes.

I published in January a notice that I would not sell my Seedling Potatoes—such as the Cuzco, Garnet Chili, Pink-eye Rusty-Coat, and others, next spring. I also offered to send my Sale-bill, describing these sorts, to such persons as would send for it. I likewise hinted that probably I might sell a New Early Seedling in the spring. Now I wish to give notice that I can send those Sale-bills no longer, that I shall not sell that new Seedling. If the farmers will leave me entirely at rest, I may possibly recover health so that they may hear from me next year.

CHAUNCEY E. GOODRICH,

Utica, N. Y., March 1st, 1864.

SEEDS FOR THE FARM AND GARDEN,

Mailed post-paid to all the Loyal States. The following list of Seeds, the purity and vitality of which can be confidently recommended, will be mailed as above, upon receipt of the prices affixed:

Beets—White French Sugar, Mangel Wurt-	Per oz. ¼-lb. lb.
" Early Bassano, Turnip, Long Blood,"	8c. \$0.20 \$0.50
" Large Drumhead and Golden S-	10c. 1.25 2.00
voy.	20c. 1.50 2.50
" Premium Flat Dutch, Red Dutch,"	20c. 1.50 2.50
" (Marblehead) Stone Mason,"	25c. 1.75 3.00
" (Marblehead) Mammoth very large,	per packet 25 cents.)

Cauliflower—Early Paris (the very best) 1.00 7.00 13.00

Carrot—Improved Long Orange, extra deep color 10c. 0.75 1.50

" Altringham, White Belgian," 10c. 0.60 1.00

" Extra Early Short, Early Horn," 10c. 0.55 1.25

Celery—Incomparable White, Mammoth Red, 20c. 1.20 2.50

Cucumber—Early Russian, Long Green, 20c. 0.80 1.50

" Early Frame, White Spine," 10c. 0.50 1.25

Kohlrabi—Early White, Purple, 20c. 1.25 2.00

Lettuce—Early Silesia, Summer Cabbage, 20c. 1.25 2.00

" Large India Boston Curled, Paris

" Con."

Musk-melon—Green Citron, Nutmeg, Chris-

"iana," 15c. 0.75 1.25

Onion—Yellow Danvers, White Portugal, 25c. 1.75 3.00

" Red Wethersfield, 20c. 1.25 2.00

Parsnip—Long White, Hollow Crown, 10c. 0.50 1.25

Radish—Early Frame, Olive Shaped, Salmon, 10c. 0.40 0.75

Salsify, 20c. 1.25 2.00

Spinach—Round and Prickly, 10c. 0.30 0.50

Squash—Summer Crookneck, Scallop, 10c. 0.40 0.75

" True Boston Marrow," 15c. 0.80 1.50

" Hubbard (true)," 10c. 1.10 2.00

Tomato—Early Round Smooth, 20c. 1.25 2.25

" Fojeda Island Large Yellow," 25c. 1.50 2.50

" New Erect French—grows upright per packet 10 cents,

Turnip—Early Dutch Bed Top," 10c. 0.40 0.75

" Ruta Baga, Skirving's, Laing's," 10c. 0.30 0.50

Prices for larger quantities will be given upon application

B. K. BLISS, Springfield, Mass.

GARDEN SEEDS,**BRIDGEMAN'S**

Annual Priced List of
Vegetable Seeds, &c.,

is ready for delivery.

ALSO

His Descriptive Catalogue of
FLOWER SEEDS,

INCLUDING FLORAL NOVELTIES for 1864.

ALFRED BRIDGEMAN,
876 Broadway, New-York City.

Very Choice Tobacco Seed. Connecticut Seed Leaf.

25 cents per ounce, \$3 per pound. We will send by mail one ounce seed and Judd's "Tobacco Culture," for 50 cents.

4 ounces seed and Judd's "Tobacco Culture," for \$1.

HARVEY B. LANE,
151 Nassau-St. New-York.

Connecticut Seed Leaf Tobacco Seed.**Be Sure and get the Best.**

The Subscriber offers for sale a very clean lot of the above, raised expressly for him, by one of the most successful cultivators in the valley of the Connecticut. Packets containing ONE OUNCE, WITH FULL DIRECTIONS FOR CULTURE, will be mailed post-paid, to any address in the Union, upon receipt of 50 cents. Prices for larger quantities will be given upon application. Address B. K. BLISS, Springfield, Mass.

Dwarf Broom Corn Seed.

The best kind of Broom Corn that grows. I will send by mail 1 ounce packages to any address, on receipt of 10 cents.

Address D. REDFIELD, Scotchtown, Orange Co., N. Y.

Roses, Dahlias, Verbenas,

And all other Bedding Plants. We take pleasure in offering to our Friends and Patrons, our fine stock of strong and healthy Flowering Plants at the lowest rates. Egg, Tomato, Celery and other Garden Plants in their proper season. Victoria, and Linnaea Rhubarb. Hardy Grape Vines &c.

Also Cut Flowers, Wreaths, Crosses, and Bouquets made to order. All plants carefully packed free of charge, and forwarded to any address.

JOHN H. SMITH, South Norwalk, Conn.

CHICORY SEED.**THE GREAT SUBSTITUTE FOR COFFEE.**

A supply of the genuine article just received by the Subcriber, and will be mailed post-paid to any address, upon receipt of the price affixed. Packets containing 1 ounce, 15 cents; 8 ounces, 60 cents; 1 pound, \$1.00.

Directions for culture accompany each package.

B. K. BLISS, Springfield, Mass.

GOODRICH'S SEEDLING POTATOES.—Cuzco,

Rusty Coat, and Garnet Chili at \$3 per bbl. Address E. WILLIAMS, Mont Clair, N. J.



No Iron Frame to Break, or Rust, and Spoil the Clothes.
53,818 sold in 1863.

It was pronounced superior to all others at the World's Fair at London, 1862. It took the FIRST PREMIUM at the great Fair of the AMERICAN INSTITUTE, in New-York City, 1863.

It took the FIRST PREMIUM at the NEW-YORK STATE FAIR.....1862 and 1863.
VERMONT STATE FAIR.....1863.
PEACE AND FRIENDSHIP FAIR.....1863.
IOWA STATE FAIR.....1863.
ILLINOIS STATE FAIR.....1863.
INDIANA STATE FAIR.....1863.
And at County Fairs without number.

SELF-ADJUSTING and ADJUSTABLE!

The only Wringer with the Patent

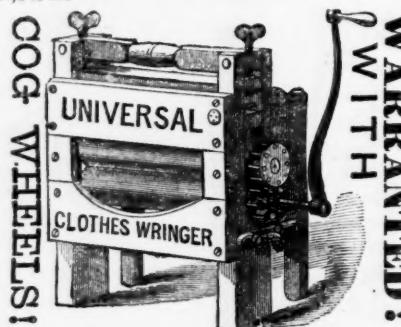
Cog Wheel Regulator,

which POSITIVELY prevents the rolls from

BREAKING, OR TWISTING ON THE SHAFT.

Without Cog-wheels, the whole strain of forcing the cloth through the Machine is put upon the lower roll causing three times as much strain upon the lower roll as when Cog-wheels with our Patent Regulator are used, besides the extra strain upon the cloth.

In reply to the question, "How LONG WILL IT LAST?" we can only say, "As long as a wash-tub, cooking-stove, or any other family utensil." See testimony of ORANGE JUDD, of the American Agriculturist, No. 41 Park Row, N. Y., who says of the



We think the machine much more than PAYS FOR ITSELF EVERY YEAR in the saving of garments. We consider it important that the Wringer be fitted with Cogs, otherwise a mass of garments may catch between the rollers and the cranks-shaft will tear the clothes, or the rubber break loose from the shaft. Our own is one of the first made, and it is as GOOD AS NEW after nearly FOUR YEARS' CONSTANT USE."

TIME, LABOR, CLOTHES AND MONEY.

It is easily and firmly secured to the tub or washing-machine, and will fit tubs of any size or shape.

It is not only a PERFECT WRINGER, but the Cog-wheels give it a POWER which renders it a most

EXCELLENT WASHER,

pressing and separating as it does the DIRT with the WATER, from the clothes.

It will save its cost every six months in the saving of clothes. We have seven sizes, from \$5.50 to \$30. The ordinary family sizes are No. 1, \$10, and No. 2, \$7. These have



AND ARE WARRANTED

In every particular. This means, especially, that after a few months' use, the lower roll

WILL NOT TWIST ON THE SHAFT,

and tear the clothing. In our monthly sales of over 5,000, only from one to two dozen are without Cogs. In our retail sales we have not sold one in nearly two years! This shows which style is appreciated by the public. This is the only Wringer with the

PATENT COG-WHEEL REGULATOR,

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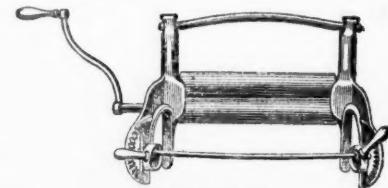
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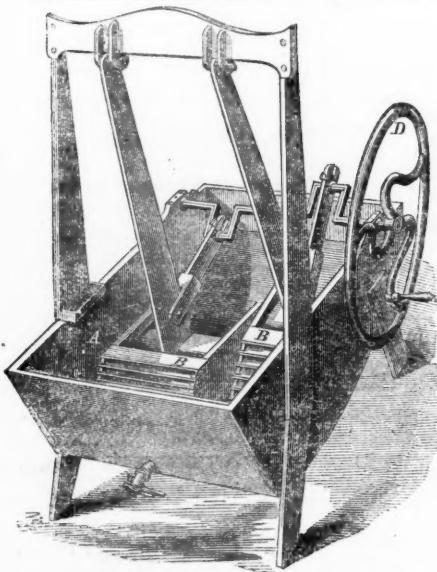
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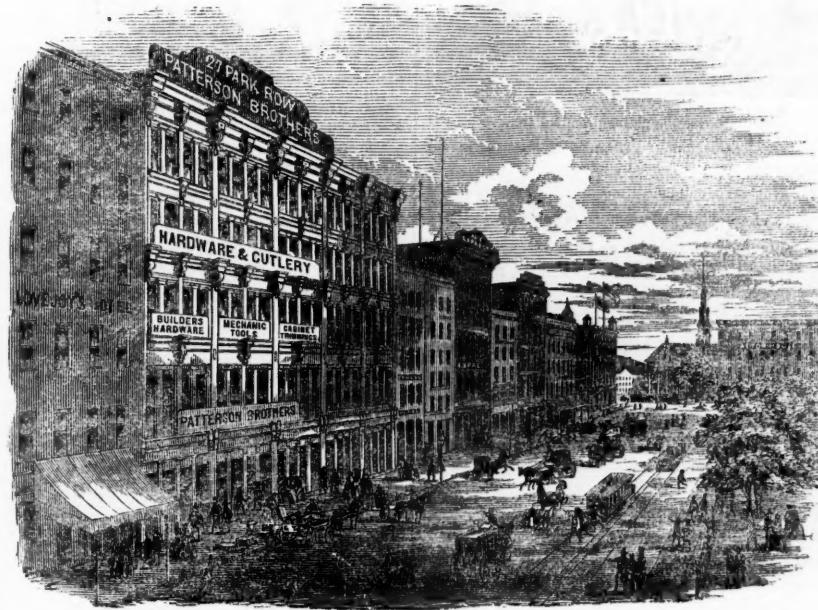
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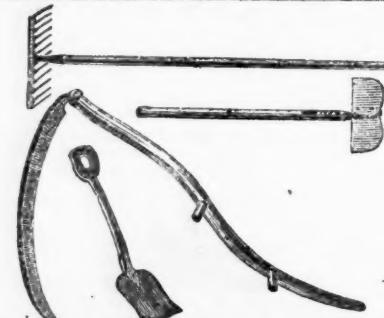
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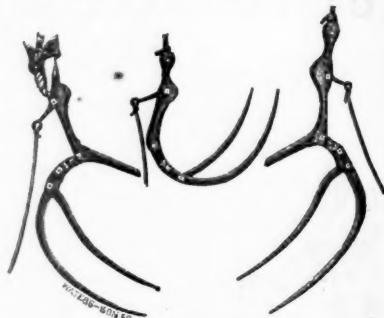
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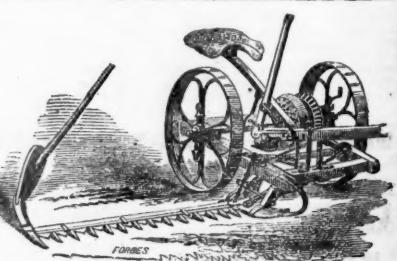
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The experience of thousands of customers attest to the fact that it is the **cheapest** and the **very best** fertilizer in market. It is particularly adapted for tobacco, Corn, Potatoes, and Garden truck. A pamphlet containing directions for use, &c., may be had free by addressing a letter to the

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Those who have used the above valuable fertilizer the past year, give it the preference over

No. 1 Peruvian Guano, Bone, or Poudrette.

In the year 1862, some **fifty tons** were sold. Last year orders came in to the amount of **four hundred tons**, only half of which could be filled. This year we shall manufacture **ONE THOUSAND TONS**.

Its "component" parts are:

40 per cent. of Animal fibre and Blood.

40 per cent. of pure Ground Bones.

20 per cent. of Absorbents.

The absorbents are Charcoal and Gypsum.

Price \$45 Per Ton, packed in barrels 250 lbs. in each. Send for Circular. GRIFFING BROTHER & CO., 58 and 60 Courtlandt-st., New-York.

PURE BONE DUST.**COE'S SUPERPHOSPHATE OF LIME, PERUVIAN GUANO, PLASTER, etc.**

in quantities to suit purchasers. **PLOWS, HARROWS, CULTIVATORS**, and a large assortment of Agricultural and Horticultural Implements, Tools, &c. See advertisement in March number.

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A real guano containing from seventy to eighty per cent of Phosphate of Lime, to which has been added, by a chemical process, a large percentage of Actual Ammonia so fixed that it can not evaporate, making it equal if not superior to any other fertilizer.

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The Bone is well known for its lasting effects, and the night soil and guano for their quick action, the combination producing a fertilizer EQUAL to guano, and far superior to Superphosphate or ground bones. Farmers using it during the past two years, speak of it in the highest terms. Price \$15 per ton. Packed in bags, of 200 lbs. each.

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Water and Wine Problem.—A correspondent sends to the *Agriculturist* the following, which is not new, but which may interest many who have not before seen it: "A servant drew off 1 gallon on each day, for 20 days, from a cask containing 10 gallons of wine, each time supplying the deficiency by the addition of 1 gallon of water. Afterward to escape detection, he again draws off 20 gallons, 1 gallon at a time, supplying the deficiency each time by 1 gallon of wine. How much water and how much wine then remained in the cask?"

About the 100,000.

Last month we asked our readers to give us 10,000 more subscribers to complete the desired *One Hundred Thousand*. The responses are already numerous, and the tone of the letters very kind and cheering. At this date (March 14) the 200 to 300 names daily received, indicate that the list will be nearly, but not quite full at the end of March. May we once again solicit each reader who can, to favor us with another name or two this month, so that we can surely begin **MAY** with an *Agriculturist Family of 100,000?* This number has been a sort of ambition with us for many years past. We were approaching toward it when the war broke out and cut off a large list, but we are now nearer the figure than ever before, and when it is reached we intend to suspend further special efforts, premiums, etc. Relying upon the good will of our readers to make up the small balance required, we print the 100,000 copies of this number, and will print and supply the three previous numbers of this volume to names now received, unless otherwise directed.

Volume **23** complete shall be the best investment of a dollar that any one can make. Several express their kind wishes, but say every family they know has the paper now. This is not the case in many other places.—The General Premiums are continued in another column, and unfinished Premium lists can be completed, or even new ones made up. People just now beginning their spring work, will feel the need of the hints and suggestions of such a paper. Aside from these, we solicit single names at \$1—which are specially desirable, when paper and work cost so much as now. Will the kind reader favor us with *at least one name* of the few thousands only required now to complete the round number?

Special to Advertisers.

The rates are advanced a little (see page 121), but all things considered, they are still the lowest, or the *cheapest* anywhere to be found. The average charge in all the agricultural journals in the country is between 3 and 4 cents per line for each 1000 subscribers, and the lowest charge in any journal is considerably over one cent per line per 1000 circulation, while the rates in the *Agriculturist* are only about *three-fourths of one cent* per line for each 1000 papers printed. It is to be noted, also, that our advertisements are very select, that they are well printed, and that they are a long time before the readers. We repeat, then, that all things taken into account, our terms are the cheapest in the world, and of this fact we are assured by many of our oldest and largest customers. At present cost of paper we can not afford to print a supplement. When the space is full, we must leave out further favors, as we have largely done this month. We shall not be sorry if this advance in price materially lessens the space occupied, and leaves us more room for reading matter. It will also make those advertisements which are inserted all the more valuable. Please observe the *italicized* note given with the terms on page 121. A large amount of space is already engaged for May, and those desiring room should make early application.

"Our Variety Store."—In response to the urgent requests of some of the late coming advertisers, we added a supplement sheet last month. But it did not look well, and so, after the fair notice given, we shut down this month when the usual space was full. Several ask us to refer to their advertisements; we cheerfully direct the attention of our readers to the *whole*, for no better collection of business notices were ever thrown together. We have aimed to admit no advertiser whom we would not patronize if in want of any thing in his line. Of course there are things we might not want to buy or use, but we believe every one of our advertisers will do what he offers to do.—Read the advertisements all through; they tell what is for sale, by whom, and generally at what price. The business pages are a good "Variety Store," set up in every household where the paper goes.—Many advertisers ask us to request persons ordering, or sending for catalogues, circulars, etc., to always

state where they saw the advertisements.—The very liberal advertising enables us to keep subscription terms at the old rates even in these times, while almost all our contemporaries have advanced, or announce higher prices.

Premiums for 1864.

Or Pay to Voluntary Agents who attend to Collecting and Forwarding Clubs of Subscribers to the *Agriculturist*.

Table of Premiums and Terms.

Name of Article	Names sent	Price of Premium
Good Books—See terms below *	\$0 cents each	\$1 each.
A—American Cyclopaedia (Appleton's New).	150	25
B—Best Family Clothes Wringer.	19	5
C—Nonpareil Washing Machine.	40	50
D—Sewing Machine, (Wheeler & Wilson).	95	105
E—Sewing Machine, (Wilcox & Gibbs).	95	105
F—Woodruff's Mercurial Barometer.	20	30
G—Woodruff's Mercurial Barometer.	30	50
H—The Aquarium.	30	50
I—Five Line Metal (best).	150	30
J—Four Octave Melodeon (best).	150	30
K—Seven back Volumes <i>Agriculturist</i>	25	50
L—Six do do do	44	55
M—Five do do do	20	40
N—Four do do do	10	20
O—Three do do do	72	15
P—Two do do do	48	12
Q—One do do do	24	5
R—Jacob's Portfolio Paper File.	15	15
S—Oshorn & Hodgkinson's Palms.	15	15
T—Premium Cylinder Plow No. 1.	100	30
U—Plow No. 20, with counter.	100	30
V—Hay and Straw Cutter (best).	50	50
W—Steel-tooth Cultivator (best).	50	50
X—Family Lard and Wine Press, No. 2.	60	60
aa—Case of Drawing Instruments.	60	60

No charge is made for packing or boxing any of the articles in this Premium List. The books, and the Premiums K, to S, inclusive, are DELIVERED to any part of the United States and Territories, free of all charges. The other articles sent the recipient only the freight after leaving the manufacturer of each. *aa*—Every article offered is new and of the very best manufacture.

Full particulars in reference to the premium articles and the terms, are given in the January *Agriculturist*, page 25. We invite the continued efforts of our friends, in filling up premium clubs under way, and new premium lists may still be started. Many hundreds have already secured and received one or more of the above good articles.—The book premiums are to be selected from our list on page 101 to the amount of 10 cents for each subscriber sent in clubs at 80 cents; or to the amount of 30 cents for each name at \$1 a year. But no book premiums are given, where the club does not number at least 20 names. The books are *delivered free of cost*, by Mail or Express, to any part of the United States and Territories, and to the borders of the British Provinces. Many Farmers' Clubs have united their efforts and by means of this premium, obtained a good Library.

N. B.—The varying cost of books and other articles, requires some changes in the above premium terms, from month to month. The terms, therefore, hold good only for the particular month in which they are published.

CLUBS can at any time be increased, by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will of course be sent to added names.

Any Number of the *Agriculturist* Wanted, from January, 1857, to the present time, can be had for 10 cents. We have stereotyped plates of the last seven volumes, and print back numbers as needed. Complete volumes (from 16 to 22) are sent post paid for \$1.24 each, if unbound; or \$2.00 each if sent bound. (At the office, or by express, unpaid, \$1 and \$1.50 each.)

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For the Farm, Garden, and Household.

A THOROUGH-GOING, RELIABLE, and PRACTICAL Journal, devoted to the different departments of SOIL CULTURE—such as growing FIELD CROPS; ORCHARD and GARDEN FRUITS; GARDEN VEGETABLES and FLOWERS; TREES, PLANTS, and FLOWERS for the LAWN or YARD; care of DOMESTIC ANIMALS, etc., and to HOUSEHOLD LABORS, with an interesting, instructive department for CHILDREN and YOUTH.

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The teachings of the *Agriculturist* are confined to no State or Territory, but are adapted to all sections of the country—it is for the whole AMERICAN CONTINENT.

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Six copies, one year. 5.00
Ten or more copies one year. \$0 cents each.

To add to the above rates: Postage to Canada, 12 cents; to England and France, 24 cents; to Germany, 36 cents. Postage anywhere in the United States and Territories must be paid by the subscriber, and is only three cents a quarter, if paid in advance at the office where it is received. Address all communications to the Editor and Proprietor, ORANGE JUDD, 41 Park-Row, New York City.